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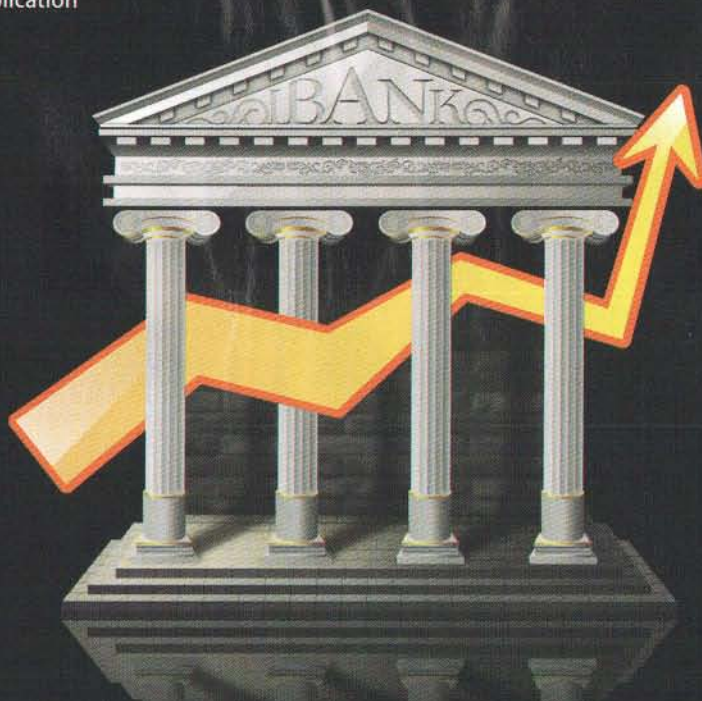
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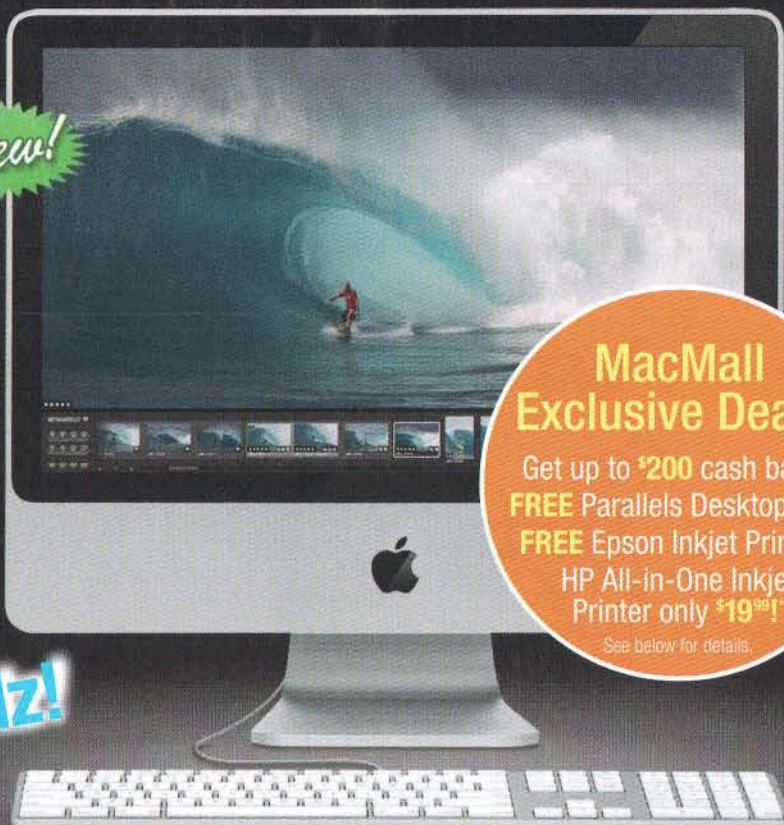
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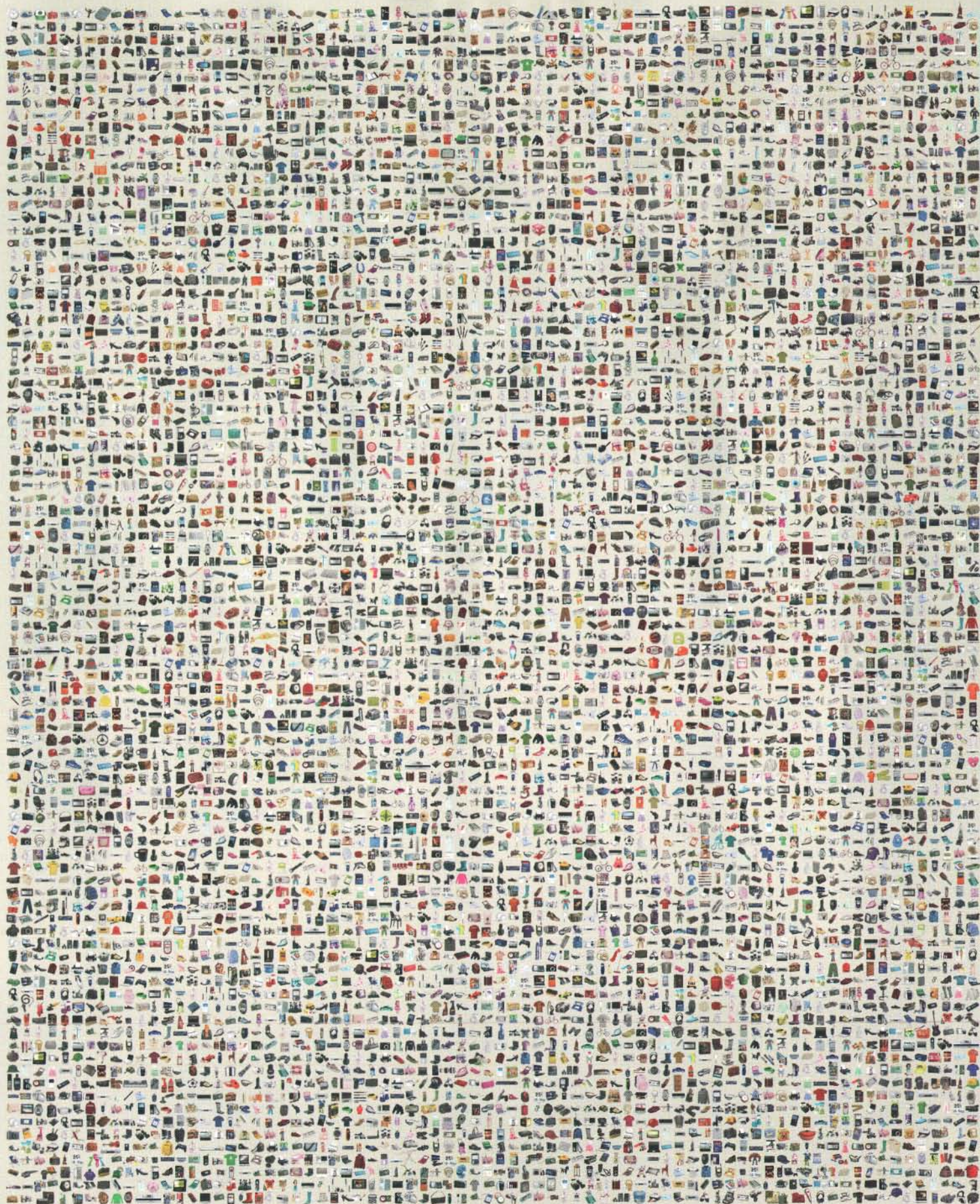


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From the Editor

It's that kind of feeling you get when you're lost in a new town and a stranger points you in the right way. Or the e-mail that you get from someone who remembers the current project you're on and have sent you a supporting article. It's about sharing; passing on the knowledge that you have. And that's why MacTech is here: to disseminate knowledge from all over to help you, the reader, do a better job. We get comments from all over, up and down the scale. While most say they are very happy with the magazine, some say we're too basic and others say we're too advanced.

One way to get just the magazine you're looking for is to contribute. As the person responsible for finding authors and topics, I feel pretty good about the spread of content we present each month. If there's something missing, though, please, speak up! If you can share a cool bit of technology that you've worked on, then write about it. If someone you know has something they should be sharing, prod *them* to write! Let us know all about it at editorial@mactech.com.

This month sees the return of **Kool Tools**, our regular feature introducing you to applications you should know about. This month, **Dennis Sellers** reviews OmniGraffle Pro 5 and DVDxDV.

Returning author **Ben Greisler** teaches us about one of the most awaited features in Leopard Server, the **Wiki server**. As a system administrator, you need to know more than just how to enable the service. It's important to know what impacts you and your users so you can keep things running smoothly. Ben shows the way.

Marcus Zarra gives a straightforward account of creating a menubar item. A handy way to give users status on processes that may have no other interface, "**Enhancing Your Application With NSStatusItem**" talks about the topic in a way that we haven't published previously.

On the cover, **Mihalis Tsoukalos** brings us everything you need to know about creating a widget. Specifically, he shows how to **create an RSS feed widget** "by hand," detailing all of the moving parts.

Dave Dribin's Road to Code drives into deeper territory exposing **Objective-C's ability to archive objects**.

Our publisher **Neil Ticktin** gives the scoop on the recent announcement by Microsoft that VBA will be coming back in the next version of Microsoft Office. If you rely on VBA scripting, what do you do *now*? We reveal several alternatives. (One option that cropped up after the article was written is the current beta of OpenOffice 3, which supports basic VBA scripts. You may want to investigate this in addition to the options in our article. Find the beta at <http://download.openoffice.org/3.0beta/>).

Greg Neagle, writing for **MacEnterprise**, helps you plan for rolling out FileVault in an enterprise. For a home user, FileVault is as simple as enabling it. However, larger organizations need to plan for its use, and Greg shares his tips and tricks on doing so.

Author **Norman Palardy** brings us the next addition to his series on **REALbasic**. This time he dives into the beginnings of a real application.

In this month's **MacTech Spotlight**, we feature **Matt Giger**, owner of **Lunar Software**. The primary product from Lunar Software is **EarthBrowser**: a "platform for viewing and creating geographically based information." (Yes, this existed before Google Earth). Matt didn't mention, but I will, Cosmo Saver (<http://www.cosmosaver.com>), an awesome screen saver from Lunar Software that lets you drift through the Solar System. Check out Matt's travels from Vic-20 to OS X developer and beyond.

Mac In the Shell is on holiday this month, and will be back next month with more shell-based antics.

Until next month, please, keep sharing – both your code and your thoughts!

Ed Marczak,
Executive Editor

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Beginning REALBasic

Designing the Application

by Norman Palardy

REALbasic is a Rapid Application Development (RAD) tool from REALSoftware. In previous columns we've looked at it briefly and even talked with Geoff Perlmann, the CEO of REAL Software. This month we're continuing our series of articles that aim to get you started with REALbasic and show you how to be productive with it. For this series we're using the latest version of REALbasic; version 2008r1.

Designing the Interface

In this installment we're creating an application that tracks the prices of stocks. This will involve accessing the Internet to grab quotes, graphs and a database. Some of the components required are built in to REALbasic itself, and others will have to come from third parties.

In this installment we'll design the interface, the database and the windows we'll need for adding stocks to track. We'll get started writing the basics that make the whole project come together.

First, start REALbasic so you have a new project to work with.

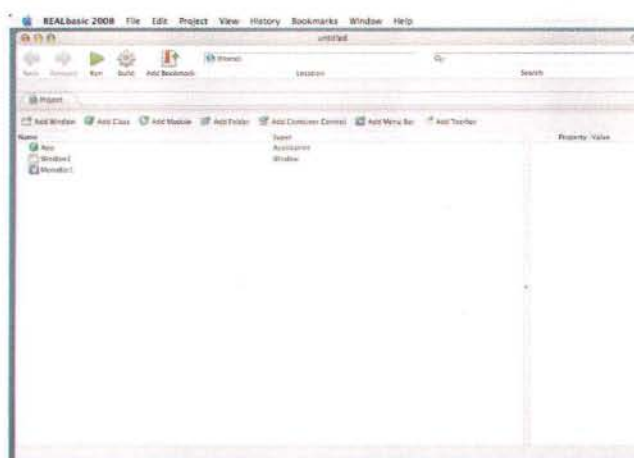


Figure 1. REALbasic default project

As we saw last month, this default project is a fully functioning program. You could immediately run it by pressing the green Run button.

Let's consider the tasks we'll need to accomplish to make this program work the way we want.

- We'll need a way to add and remove stocks from the list of ones we're interested in.
- It should keep quotes for any stocks we currently have, or had an interest in at any time
- We'll need a way to view the current set of stocks we're interested in and their prices
- We'll need a way to get the stock prices from a designated source
- We'll need a way to designate which source we're going to read data from
- Eventually we'll want a way to graph prices of stocks over time

That's a lot of things to consider so we'll tackle them one at a time. Let's start with how we show our list of stocks of interest.

In the project we created earlier, there should already be a window called Window1. Let's start by editing that window and altering its layout to turn it into one that shows our list of stocks.

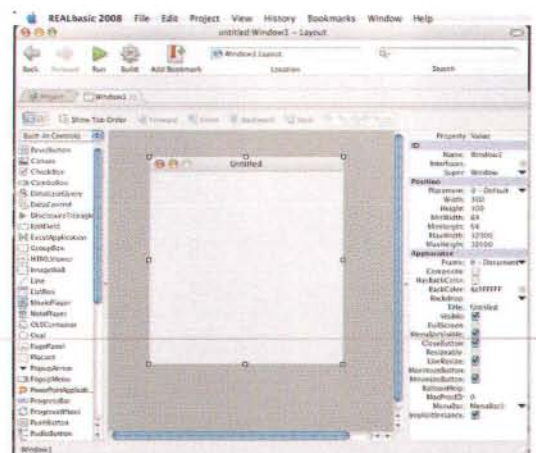


Figure 2. Editing a REALbasic window

Patrick Emerson

From: Patrick Emerson [pemerson@yourc
Sent: Tuesday, March 11, 2008 1:38 PM
To: Michael Allen
Subject: Moving to a Subscription Based Sales Model

Mike,

I've run the numbers and I really think we should recommend a subscription model to Steve. With our product, it's a financial win and now allows us to easily monetize our support services. Add in the fact our customers will benefit with more choice on how to purchase our product...it's a no-brainer.

Thoughts?

- Patrick

----- Michael Allen Replied -----

From: Michael Allen [mallen@yourcompany.com]
Sent: Tuesday, March 11, 2008 1:42 PM
To: Patrick Emerson
Subject: Re: Moving to a Subscription Based Sales Model

Patrick,

Yes, I agree it makes great financial sense. Here's the thing, we have to build it. This means new code in our product, new UI in our store, and managing end-user's in a whole new way. Not to mention, the compliance, legal and financial complications we will now have. Don't we also have to address all new requirements and security concerns when we save personal information and recharge someone's credit card?

I'm not sure we have the time or resources for all of that or even fully understand it. Still, I would hate to let this slide.

ALREADY DONE -
I CALLED
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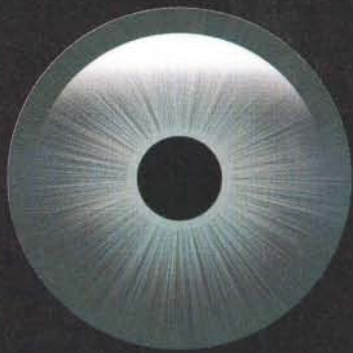
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Down the left hand side is a list of the standard controls that are available in REALbasic. Note that I'm using the Professional version. The Personal version has a smaller set of controls.

In the center is the actual editor where you lay out the look of your window. On the right is the properties palette that displays the properties of the currently selected item.

First, rename this window so that at a glance, you can know which window it is. Click the window so it is selected as shown in *Figure 2*, and then click on the Name in the property list on the right. Name this window *wStocks*.

Then add a Listbox control to the window. Rename the listbox *lstStocks* and position and resize it so your window appears about like the one in *Figure 3*. Note that *Figure 3* shows you the position and size of my listbox in the properties palette on the right hand side.

You'll also notice that the listbox has several lock properties set (LockLeft, LockRight, LockTop, LockBottom). These properties tell REALbasic to keep the listbox "locked" to the respective sides of the window if the window is resized.

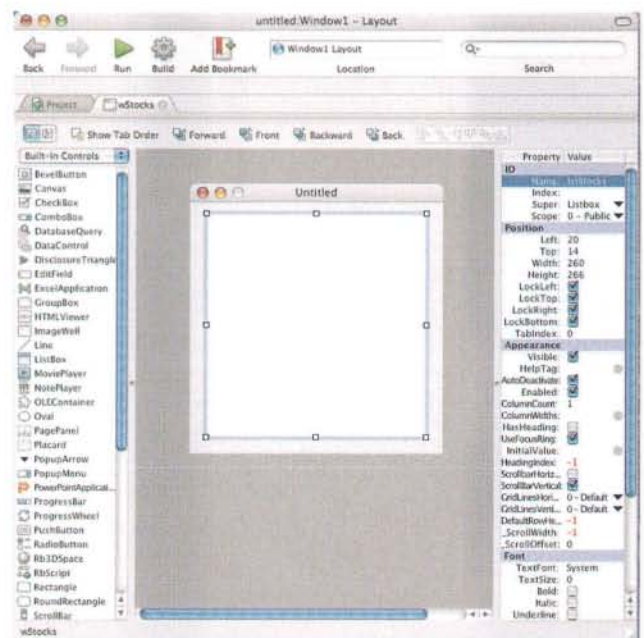


Figure 3. Create the stock list window

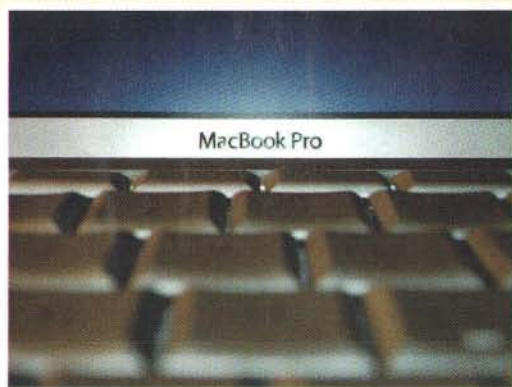
If you run the project at this point you won't see much except that a window with a large white area shows up. That area is the listbox, which is empty at this point.

The question, then, is how to fill it with data and what data to fill it with.

Every control has a number of "events" that allow you to provide custom code when something (an event) occurs. Different controls have different events. The list of events that exist for a control varies depending on what kind of control it

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is. Simple controls have few events. Timers only have one event. The listbox has a fairly long list of events. For our program let's start with just using the Open event.

This event occurs when the control is about to be shown on a window that is being opened. It occurs only once when the window is initially opened. There are other events that occur more frequently but for the start of this project we'll use this event.

One thing to be aware of is that event ordering is generally not something you want to rely on. You have no idea if the listbox Open event occurs before or after some other controls Open event. The other control may not even exist yet. So you have to be careful about how you use certain events and what you try to do in the code for that event.

If you double-click the listbox you will be shown the code editor. REALbasic also tries to be helpful and selects the most likely event you are going to want to edit. In this case that's the Change event for the list box.

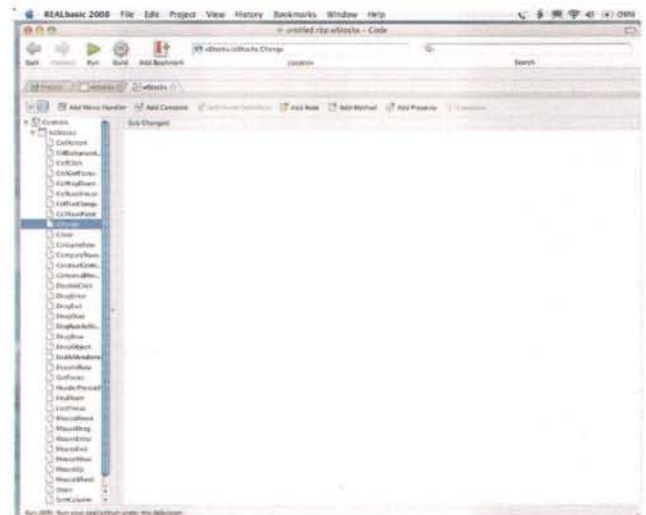


Figure 4. Editing the listbox events in the stock list window

Select the Open event in the left hand pane and then add the following code :

```
me.ColumnCount = 3 // change the number of visible
columns
me.HasHeading = true // make the list box have a leading
row
me.Heading(0) = "Symbol" // set the heading for the first
column
me.Heading(1) = "Time" // set the heading for the second
column
me.Heading(2) = "$" // set the heading for the third
column
```

Much of this CAN be done without writing code. If you review figure 3, you'll see that in the right hand properties pane there are settings for ColumnCount, HasHeading and InitialValue. If you set the columnCount property to 3 then the listbox will have 3 columns. If you check HasHeading then the



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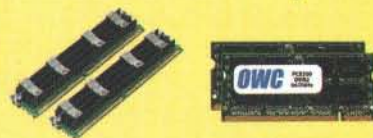
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Photoshop® CS3 Results

RAM Configuration	Stock 2.0GB 2048MB (2x 1024)	OWC Powered 4.0GB 4096MB (2x 2048)
MacBook® Pro 15" (Mid/Late 2007) 2.2 GHz Core™ 2 Duo (4MB L2 Cache)	122.37 seconds	Only 85.15 seconds! 30% faster
MacBook Pro 15" (Early 2008) 2.6 GHz Core 2 Duo (6MB L2 Cache)	102.50 seconds	Only 72.94 seconds! 29% faster

This benchmark measures the time (in seconds) it takes to execute a custom 21-step action script using Adobe® Photoshop CS3.

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"RAM Hog" Results

RAM Configuration	Stock 2.0GB 2048MB (2x 1024)	OWC Powered 4.0GB 4096MB (2x 2048)
MacBook Pro 15" (Mid/Late 2007) 2.2 GHz Core 2 Duo (4MB L2 Cache)	297.68 seconds	Only 84.97 seconds! 71% faster
MacBook Pro 15" (Early 2008) 2.6 GHz Core 2 Duo (6MB L2 Cache)	250.28 seconds	Only 76.50 seconds! 69% faster

This benchmark times how long it takes to run our standard 21-step Photoshop action script in Photoshop CS3 when 50% of the installed RAM is taken up with another program.

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listbox will have a heading and the setting for InitialValue will be used as the column headings. We've done these things in the Open event simply to illustrate that you can change some properties on the fly and they will take effect right away. Being able to alter the number of columns and their headings at run time will be shown in future articles.

If you run the program now, you can see that when the window opens it has 3 columns with the headings we wanted.

Now we have a way to get the display looking like what we want, so now let's see about getting some rows into it that display data.

If you look up ListBox in the built-in Language Reference, you'll see it has numerous events, properties and methods. Again, an event is some piece of code that gets run when something happens; a person selects a row, clicks a button or presses a key. Properties are the "settings" of various aspects of the control; the number of columns, which row is selected, or other display related values like the text font and size.

Methods are behaviors that the listbox will perform. These are actions like adding a row (AddRow), remove a row (RemoveRow), or ways to get data from the listbox (Cell and CellTag).

For our use AddRow is the one we need at present. At the end of the open event add the following code :

```
me.AddRow "AAPL" // add one symbol we're interested in
watching
dim newDate as new Date // create a new instance of a
```

```
Date
me.cell(me.LastIndex,1) = newDate.ShortDate + " " +
newDate.ShortTime // add the date / time stamp
me.cell(me.LastIndex,2) = format(169.73,"$,#.00") //
display Apple's current value
```

Lets review this code closely.

```
me.AddRow "AAPL" // add one symbol we're interested in
watching
```

This line adds the data for the first cell (the left most one also known as column 0) and leaves the other cells empty.

```
dim newDate as new Date
```

For the second column we want the current date and time. In order to get that information we need to create an instance of a Date object, which is conveniently initialized to the date and time from the OS when the instance was created. A Date instance is not a clock and does not automatically count forward.

```
me.cell(me.LastIndex,1) = newDate.ShortDate + " " +
newDate.ShortTime // add the date / time stamp
```

Then we fill the middle cell – the one we want to contain the date and time – by using the CELL method to refer to a specific cell. Note that in order to make sure we set the correct cell in the correct row there is a convenient property called "lastIndex" that is the row number that was last added. The code says "set the last rows cell 1 to the short date and short time" which is exactly what we want.

```
me.cell(me.LastIndex,2) = format(169.73,"$,#.00")
```

For the last column, column 2, we want a value. But the listbox only knows how to display strings. So we have to take the current value of Apple's stock, 169.73, which is a number and convert it into a string that the listbox can display. Also, we want to make sure the string that the listbox displays is formatted so it looks just the way we want. To do that we use the FORMAT method which gives us control over how numbers look when they are converted to strings.

Run this now and you'll see we're making headway. We can make the listbox display data, and we can add data to it.

Next time we'll look at how to make the data that we display more dynamic and actually get it from a web based quote service like Yahoo finance.

MI

About The Author

Norman Palardy has worked with SQL databases since 1992, and has programmed in C, C++, Java, REALbasic and other languages on a wide variety of platforms. In his 15+ years of IT experience, Norman has developed innovative and award-winning applications for TransCanada Pipelines, Minerva Technologies (now XWave), Zymeta Corporation, and the dining and entertainment industry. He holds a BSc from the University of Calgary in Alberta.

He's also the Vice President of the Association of REALbasic Professionals (<http://www.arbp.org>)

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FileVault in the Enterprise, Part 1

Data security for OS X administrators

By Greg Neagle, *MacEnterprise.org*



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Mac OS X enterprise deployment project

Data Security

Data security is a hot topic in Enterprise IT these days. As laptop usage increases, pushing out traditional desktops, the risk to company data is greater than ever. If a laptop is stolen or lost, the replacement cost of the hardware may be a pittance compared to the value of the data stored on the laptop's hard drive.

Therefore many companies are mandating some sort of data encryption for company laptops. If a laptop is then stolen or lost, the data would be inaccessible to the thief. "Whole-disk encryption" is a direction many companies are moving toward, but as of this writing, there are no shipping products that will encrypt a Mac boot volume (although some companies have products in the beta stage). So Mac administrators must work with what is available: a technology Apple calls "FileVault," which secures users' home directories with AES-128 encryption.

In part one of this series, we'll cover preparation and implementation of FileVault in an enterprise environment.

In part two, we'll examine some of the issues you may encounter when implementing and supporting FileVault in an enterprise environment, and techniques and tools to use to deal with some of these issues.

FileVault - encryption for user data

FileVault works by storing a user's files in an encrypted disk image file. Disk images are familiar to OS X administrators — many large organizations set up their OS X machines by restoring a disk image to the machine's hard drive, and many software installers are distributed in the form of disk image files. FileVault uses a disk image that is encrypted with the user's login password. When the user logs in, his or her password is used to unlock the disk image. The image is then mounted under `/Users/<username>` and for the most part, looks and behaves like a normal user home folder.

There are two primary risks associated with implementing FileVault for your users. The first is that they forget their password and cannot access their data. Since the password is

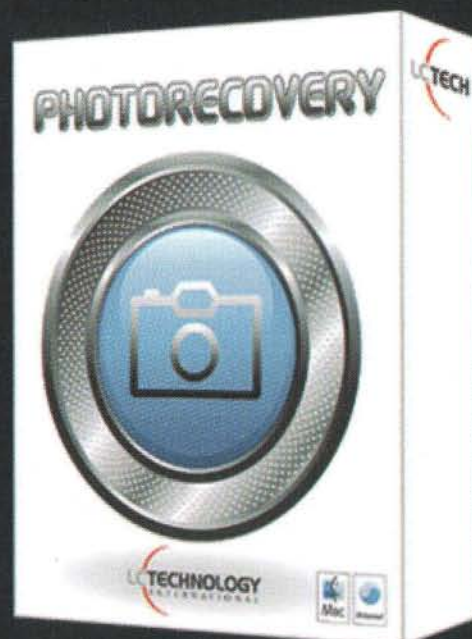
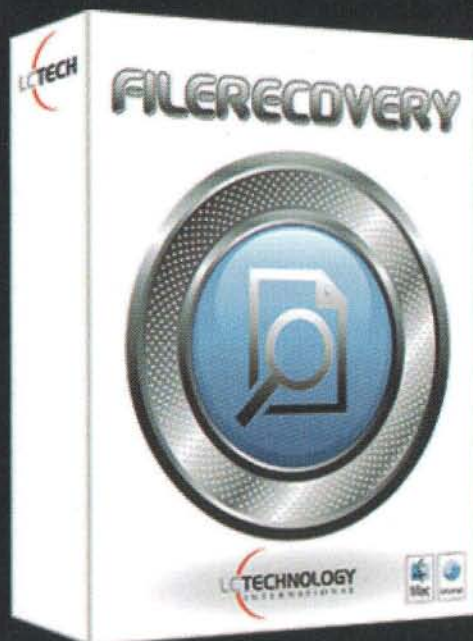
the same as the login password, this seems an unlikely scenario, but there are other ways a user can lock themselves out of a FileVault-protected account. It's not uncommon for organizations to implement a web page that all users can go to change their password. If, however, a user with a FileVault-protected account does this, the FileVault disk image is not updated with the new password — this only happens if you use the Accounts preferences pane to change your password. Another way the password can get out of sync is if the user has multiple machines, and changes their password on a machine other than the laptop with the FileVault-encrypted home directory. Apple has provided a way for administrators to unlock FileVault disk images — this is the FileVault "master password". We'll look at this later in the article.

The second primary risk associated with FileVault is data corruption. Under Tiger, FileVault-protected home directories are encrypted disk images, and since a disk image is a single file, corruption of that single file can lead to the loss of the entire FileVault home directory. This type of corruption is rare, but is possible. In Leopard, FileVault now uses "sparsebundles" as the disk image format. This stores the disk image data in multiple files within an enclosing directory. Apple claims better performance, and importantly, better reliability, which presumably means that disk image corruption is even less likely. Your best defense against data corruption is backups. Backups are always important for enterprise data, but they are even more important for FileVault-protected data.

Preparing for FileVault

Before implementing FileVault in your organization, you might want to do some prep work. The most important bit of prep work is to set the FileVault master password for all your machines. This is the password you can use to get access to a FileVault-protected disk image if the user's password has been forgotten or is otherwise not available. In order to be useful, you almost certainly want this master password to be the same on all the machines you manage.

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10.5's Security Preference pane – FileVault tab

To do this, you'll create a FileVault master password on one machine, and then copy certain files to all your managed machines. Open the Security preference pane and click **Set Master Password**. Since this will be deployed to all your managed machines, and since changing it (and propagating that change to existing FileVault-protected accounts) is difficult, make sure it's a non-trivial password, and do not make it the same as any other admin or root password you have in use. Use the Password Assistant to check on the quality of your chosen password.

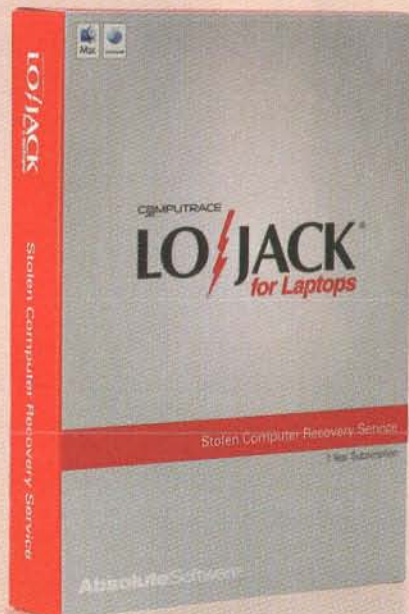
Two new files are created in `/Library/Keychains`: `FileVaultMaster.cer`, and `FileVaultMaster.keychain`.

To implement the FileVault master password on all the machines you manage, simply install these two files on all your managed machines. You can use any method to do this (put them in your install image, using ARD, radmind, FileWave, etc), but make sure they are in place **before** FileVault is turned on for any accounts on a given machine. If FileVault has been turned on before these FileVaultMaster files are installed, the pre-existing FileVault-protected accounts cannot be unlocked using the FileVault master password you just created.

The second most important preparation task is to ensure you have a method to backup user's home directories. If you are using Mobile Accounts and Portable Home Directories, you can simply back up the network home directories on the server. If you can't use Portable Home Directories, you may decide to use something like Retrospect or Time Machine to directly backup user home directories.

You may or may not want to implement the next preparation task: turning on password hints. If your users forget their passwords, in order to get a prompt to allow an administrator to unlock the account using the master password, **Show password hints** must be turned on in the Accounts preference pane, under **Login Options**, or if you are managing your clients via MCX, in Workgroup Manager, manage this Preference under **Login->Login Window**, checking **Show**

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password hint when needed and available. One last option is to do this via command-line, perhaps as part of a script:

```
sudo defaults write
/Library/Preferences/com.apple.loginwindow RetriesUntilHint
3
```

In Tiger, this setting is labeled **Show password hint after 3 attempts to enter a password** in Workgroup Manager's preference management settings.

Additionally, the MasterPasswordHint key must exist in the defaults keys for /Library/Preferences/com.apple.loginwindow. Normally, this is set when you create the FileVault master password via the Security preferences pane. But if you simply distribute the /Library/Keychains/FileVaultMaster.cer and /Library/Keychains/FileVaultMaster.keychain files to other machines you manage, this key will probably not be set.

```
sudo defaults write
/Library/Preferences/com.apple.loginwindow MasterPasswordHint
""
```

will do the job. (It's OK to have an empty hint, but the key must exist.)

Enabling password hints is itself considered a security risk in many organizations, so consider if you really want to do this. If you don't, there is no way from the GUI for an admin to recover a FileVault-protected home directory — but an admin can still do so from the command line.

The final preparation task is training. Train your tech support staff on FileVault, and provide a method for your users to find out more about FileVault as well. The better you document and train, the higher users acceptance will be.

Local preparation

There are a few things you can do on the local machine before turning on FileVault that will increase your odds of success. First, make sure the startup disk is healthy. Run Disk Utility to verify, and if needed, repair the startup disk. Second, minimize the amount of data that needs to be copied to the encrypted disk image - delete unneeded files. Empty the trash. `rm -R /Users/username/Library/Caches/*` to get rid of cache files. If you use Norton/Symantec AntiVirus, turn off AutoProtect. This will speed up creation of the new disk image and avoid issues where Norton AutoProtect interferes with disk image creation. (But be sure to turn it back on later!)

Finally, make sure there is enough free disk space on the startup disk for the FileVault conversion. When FileVault is enabled for an account, an encrypted disk image is created, everything is copied from the "unencrypted" home directory to the encrypted disk image, and finally the items in the unencrypted home directory are deleted. This means that you must have more free space on the hard drive than the size of the home directory you are encrypting. If the user has 60GB of data in his or her home directory, there needs to be more than 60GB free on the hard drive.

Turning on FileVault

Turning on FileVault is straightforward. Log in as the user for which you'd like to turn on FileVault. In the Security preferences pane, click the "Turn On FileVault..." button. If the preference pane is locked, you'll be asked to enter an admin password (which may effectively prevent users from turning on FileVault by themselves). You'll then be prompted for the user's account password (which may effectively prevent admins from turning on FileVault for users without their involvement). You'll be presented with one last dialog, informing you of the dire consequences that await you should you forget your login password and lose the master password.



FileVault confirmation dialog

New to Leopard is the option to turn on secure virtual memory from this dialog; in both Leopard and Tiger it can also be turned on in the Security preference pane. Also note the check box labeled "Use secure erase". You should check this. If you do not, when OS X removes the original home folder after creating the FileVault disk image, it is possible to recover some or all of the data using an unerase or file rescue utility. This could defeat much of the purpose of turning on FileVault.

Once you click "Turn On FileVault" in this final confirmation dialog, the current user will be logged out and the FileVault conversion process will start. If anything interrupts the logout (such as cancelling when asked what to do with an unsaved document), the FileVault conversion will be cancelled and you'll have to visit the Security preference pane to start again from the beginning.

If the FileVault conversion process fails for any reason, the partially-created encrypted disk image is removed, and the original home directory is left untouched. Possible reasons for failure of the FileVault conversion are a full hard drive; drive or file system errors or failures; and anti-virus scanning of the drive image.

Automating FileVault

New to Leopard is the ability to enable FileVault protection when creating new accounts, or creating mobile accounts. This saves a step: you no longer have to create the account, then login and turn on FileVault. More importantly, you can use MCX policies

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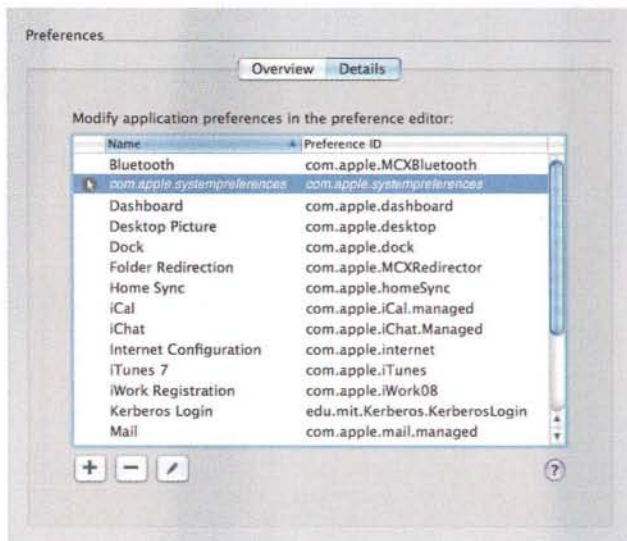
to enforce FileVault so that it is automatically turned on for all new mobile and local accounts.

Enforcing FileVault on mobile accounts is straightforward using Workgroup Manager. There is a new checkbox in Mobility preferences under Account Creation Options, labeled **Encrypt contents with FileVault**.

Apple doesn't make enforcing FileVault for local accounts quite as easy to discover or implement, but it is possible.

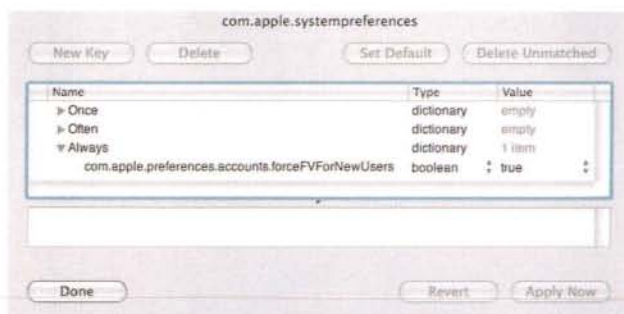
In Workgroup Manager, choose a Computer or ComputerGroup to manage, click the Preferences icon in the toolbar, then select the **Details** pane. Click the "+" button to add a new preference domain. Navigate to /Applications and double-click on the System Preferences app.

You should now have the com.apple.systempreferences domain available to you, and it should look like this:



Preferences details in Workgroup Manager

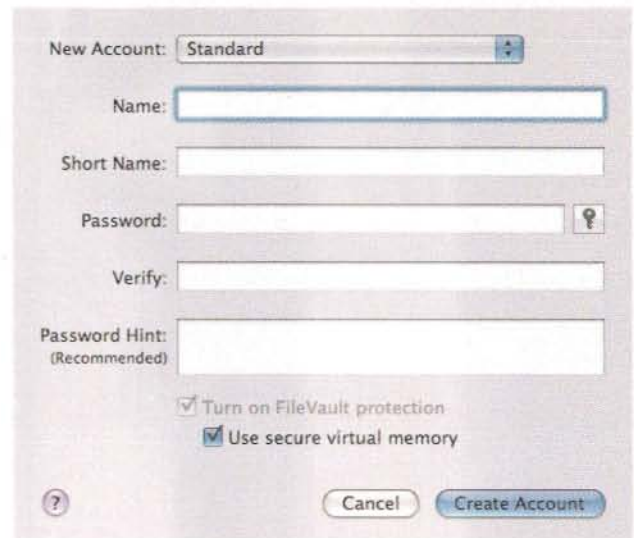
Double-click the entry for com.apple.systempreferences, and delete all the imported keys - we don't want any of them. Turn down the **Always** dictionary, and add a new key like this:



Managing com.apple.systempreferences keys

Save your changes.

Once the updated management settings become available on your managed client machines, you'll see that when creating a new local account, the Turn on FileVault protection checkbox is pre-selected, and disabled so that it cannot be deselected. All new local accounts will automatically have FileVault turned on as they are created.



FileVault enforced for local accounts

To be continued...

We've prepared our infrastructure, enabled FileVault on existing user accounts, and looked at options for enforcing FileVault for all new accounts. In part two of this series, we'll look at some issues you and your users might encounter, and what you can do to manage these issues.



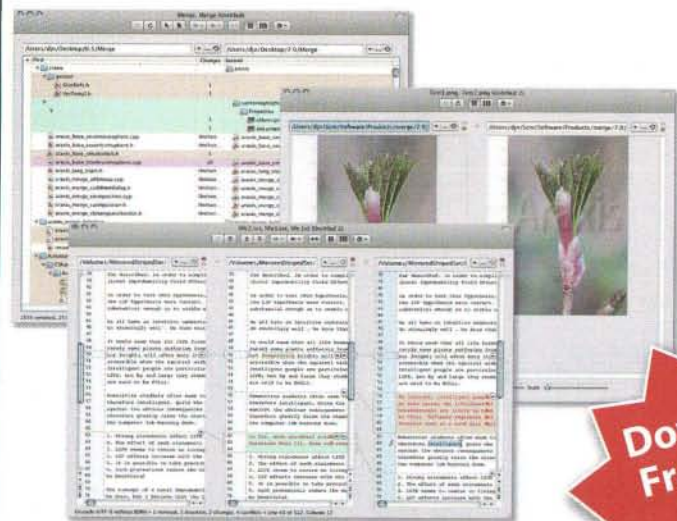
About The Author

Greg Neagle is a member of the steering committee of the Mac OS X Enterprise Project (macenterprise.org) and is a senior systems engineer at a large animation studio. Greg has been working with the Mac since 1984, and with OS X since its release. He can be reached at gregneagle@mac.com.

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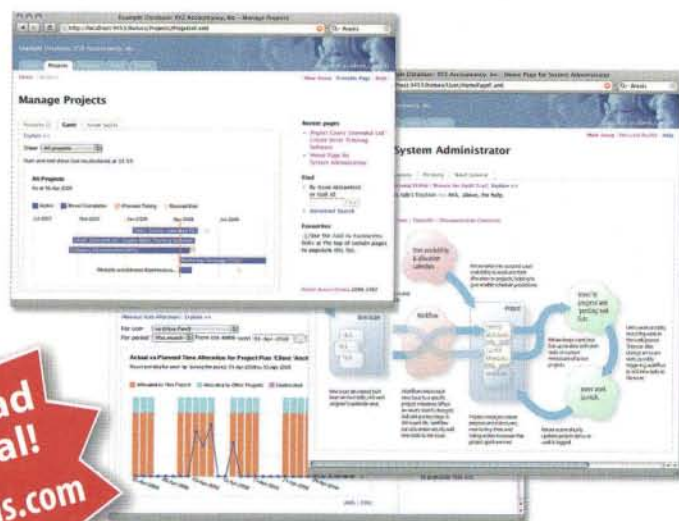
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VBA's Coming Back. Is it right for you?

VBA coming back is great, but it's not here yet,
and even so, it may not be your best solution.

by Neil Ticktin, Editor-in-Chief/Publisher

Should You Read This Article?

First off, if you don't know what VBA, scripting, or other types of automation are, this article is probably not useful for you to choose your path with Microsoft Office. In all likelihood, in your decision to upgrade or not to Microsoft Office 2008, you should look at other criteria such as features, benchmarks, compatibility, new file types, etc... to make your decision. For example, you may want to look at MacTech's benchmarks for Office 2008 (<http://www.mactech.com/articles/mactech/Vol.24/24.03/Office2008Benchmark/>)

When you are ready for it, you may want to look at scripting Office. It's a great way to automate things that you do often, improve your work flows, and be more efficient on the types of things that you do all the time.

For those you that know what VBA, AppleScript and/or scripting are about, you'll want to read on to determine which path makes the most sense for you.

Whether you are interested in scripting or not, you should first decide whether the new features or other benefits of Office 2008 for Mac are important to you. You'll want to have that in mind as you look at your scripting options.

Why VBA Went Away

Sometimes, even when you want to do something, they are just plain hard and you can't. That's the situation that Microsoft faced when they realized there wasn't enough time to ship Office 2008 for Mac, and still have it include VBA.

Office 2008 was a monstrous task — or better said — a monstrous three tasks to take on. First, the Office code base needed to be moved from Metrowerks CodeWarrior to Apple's Xcode (these are the development environments that they create the programs in). Second, Microsoft needed to make Office 2008 "universal" (i.e., make it run natively on both Intel and PowerPC Macs). And, finally, they needed to complete all

the new features, new file formats, and Office 2007 compatibility requirements (the type of things that they do on every Office upgrade).

Each and every one of these things was a big task in and of itself, and unlike previous major versions, Microsoft had to do all three at once.

So, when it came down to the decision of whether to include VBA or not in Office 2008, the answer was clear. They could not support VBA, or they could delay shipping Office 2008 for a long while (possibly as much as a year or two), but Microsoft would not be able to ship Office 2008 in a reasonable time frame *and* support VBA in that version.

MacTech believes that less than 10% (probably less than 5%) of Office users use VBA. Assuming this is correct, the VBA decision was an easy one. It had to be left out.

Don't get us wrong, VBA is important in Enterprise settings — and there's a whole lot of Office users in the Enterprise setting. Furthermore, VBA is the cross platform solution used by a lot of people even outside the large corporate setting. And, while AppleScript is better for many solutions, it's not cross platform.

VBA is coming back, but it's not tomorrow

As you've now probably heard, Microsoft has delivered some good news for VBAers ... VBA is coming back. But, before you do cartwheels in the hallway, realize that it's not going to be tomorrow. It's still a ways off.

As we said before, it's clear that Microsoft could not make any decision other than dropping VBA for Office 2008. A huge delay would have impacted a great deal more people, and was a far greater pain. But, if nothing else, Microsoft has proven to be good at listening and evolving. They could hear

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the pain that people felt missing VBA, and they've been looking at the possibility of implementing VBA in the next major release of Office. (For those of you that don't read tea leaves, Microsoft has been very clear over the past year that they do not want to wait four years for between major releases, as was the case between Office 2004 and Office 2008. Prior to that version, typically versions were 2 to 3 years apart.)

Microsoft understands the importance of providing a road map early on, even though we're not particularly used to it in the Mac market. Now that they've made the decision, they are letting the community know well in advance so you can plan accordingly.

Your Choices

Knowing that VBA is coming back has expanded the choices that you have in dealing with scripting Office. We're going to focus on how you can zero in on what is the best choice for you for today's use.

For Office on the Mac, you have two basic choices: AppleScript and VBA. AppleScript support in Office 2008 is beefed up quite a bit from 2004. And, VBA is only available in Office 2004, and will come back some point in the future ... in the next major release of Office for Mac.

Both AppleScript and VBA have their strengths and weaknesses. VBA is cross platform, but is limited to just

scripting Office applications, and does *not* include Entourage. AppleScript allows you to control Mac OS X as well as other Mac applications, is considered to be easier to learn, but is not cross platform.

Some are served best by staying with VBA in Office 2004. Others are better off rewriting their scripts in AppleScript. And, still others are better off using Office 2007 for Windows under a virtualization product like VMware Fusion or Parallels (or even booting into Windows with Bootcamp).

One thing you need to assess is the level of VBA compatibility that you may need. For most people, Office 2004 VBA was more than enough compatible with the version of VBA in recent versions of Office for Windows. Some, however, may require a greater level of compatibility in order to access new features in the Windows version of Office. But, generally, those people are experts in VBA usage, and know exactly what they need. If you aren't sure about your needs, chances are the level of compatibility in Office 2004 will suit you just fine.

With the announcement that VBA is coming back, you need to balance the question of re-writing scripts in AppleScript, or waiting it out with a temporary solution.

The easiest way to figure this out is MacTech's "Office Scripting Advisor" flow chart which asks you questions to hone in on the right solution for you (See Figure 1, following the article).

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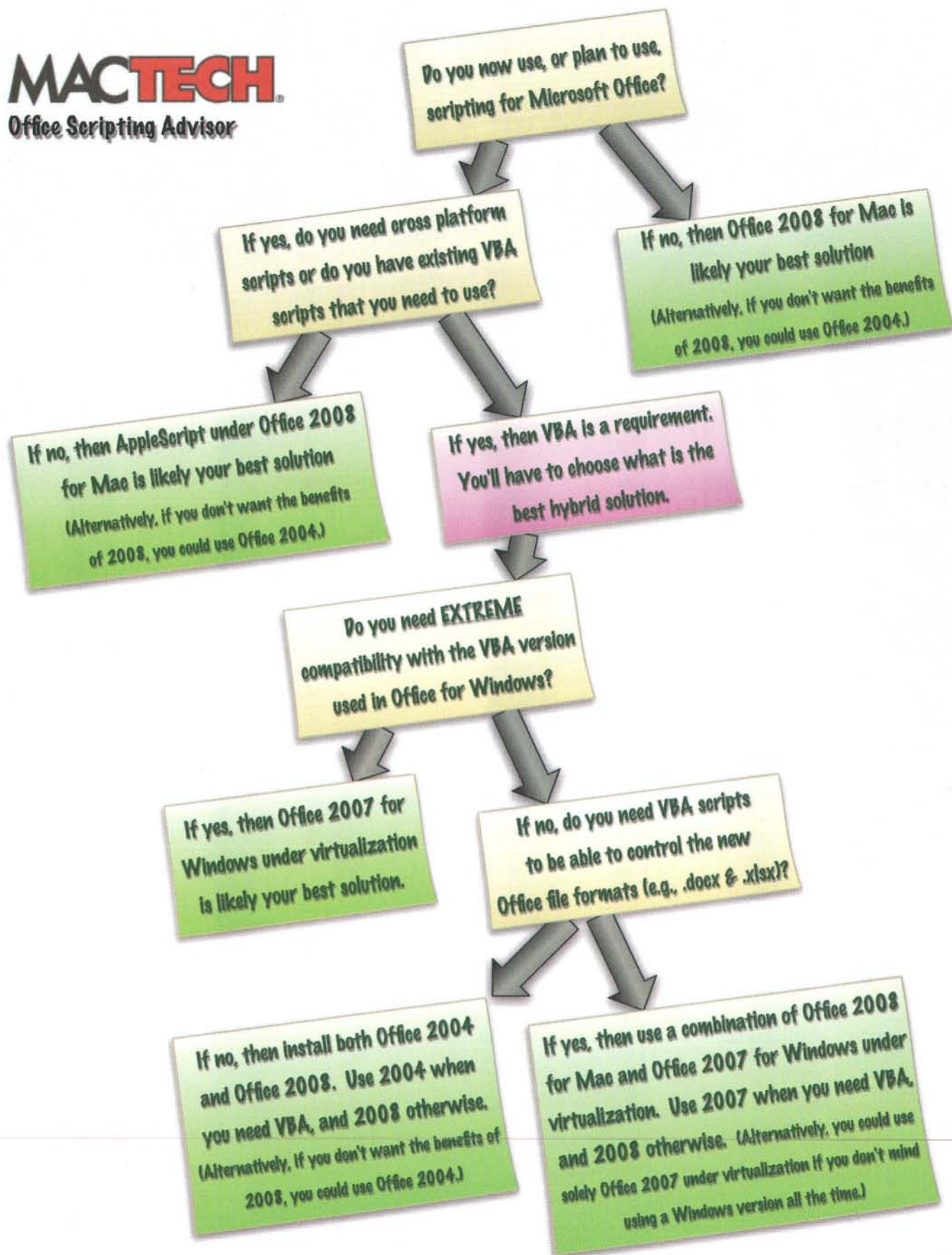


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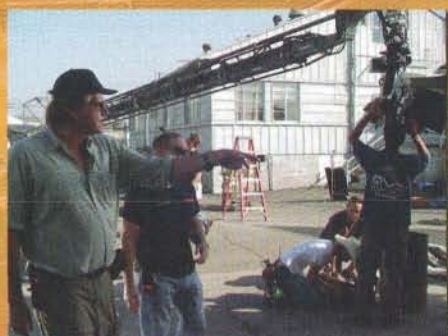
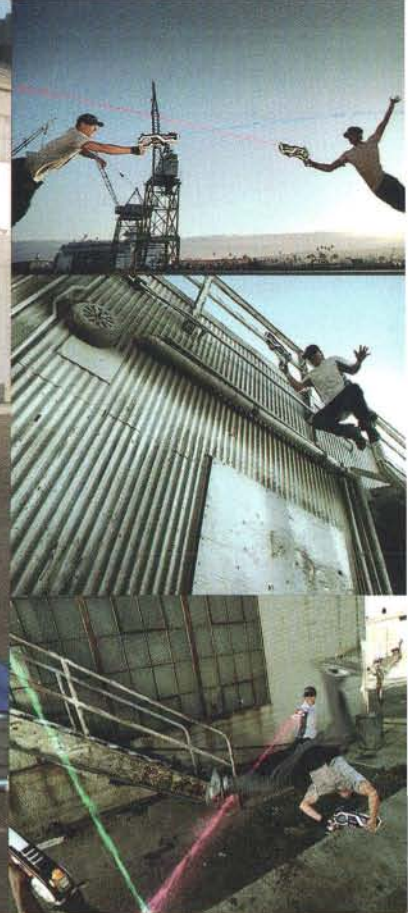
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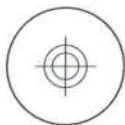
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ISV Support, Excel Solver and Other Add-Ins

One of the effects by VBA not being in Office 2008 is support for Independent Software Vendors (ISVs) that work with Office. These tend to be solutions for specifically targeted or niche markets, but are important nonetheless.

Some of these third party products are based on VBA, while others are based on the plug-in architecture. Microsoft has been looking at those solutions that worked before, but have issues with Office 2008. In some of the most important cases, there are solutions coming.

One common example is Solver (an add-in for Excel) which is used in a number of academic and other settings. Those who upgraded to Excel 2008 found that Solver was no longer supported. As of right now, there's no definitive answer on how this will be play out, but we can tell you that Microsoft is working to resolve this, and similar issues.

For those third parties basing their products on Office, there are two solutions. If you need 2008 support today, you may want to use AppleScript to control Office in your product. In the future, you'll have both VBA and AppleScript, and your choice will become which scripting language suits your needs best. And, you should keep an eye on what Microsoft does with their SDK offerings for the products you want to support.

What To Do

Now that you have an understanding of what the future holds for Office scripting, you can choose the right solution based on your needs. Today, you have a number of options. In the future, you'll have an optimal set of choices that will suit you even better.

In the end, if you did not find some specific reason to the contrary while reading this article, then you likely fall into one of two groups:

- Office 2008 with AppleScript does what you need
- A combination approach of using both Office 2004 (for VBA usage) and Office 2008 for other usage works best for you.

Whatever your situation, you now have a layout of what scripting Office looks like today, and tomorrow.



About The Author

Neil is the Editor-in-Chief and Publisher of MacTech Magazine. Neil has been in the Mac industry since 1985, has developed software, written documentation, been heading up the magazine since 1992. When Neil writes a review, he likes to put solutions into a real-life scenario and then write about that experience from the user point of view. That said, Neil has a reputation around the office for pushing software to its limits and crashing software/finding bugs. Drop him a line at publisher@mactech.com



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THE ROAD TO CODE

by Dave Dribin

One for the Archives

Archiving objects and document-based applications

One Year Later

This is the thirteenth article in the *Road to Code* column: happy one-year anniversary! We've covered a lot of ground in the last year, but we've still got the pedal to the metal. There's plenty of pavement left to cover!

In last month's article, I said that we'd talk more about `NSTableView` in this article, but I've decided to put that topic off for a bit. This month we're going to cover document-based applications, which includes how to save and open – or load – custom file types.

Document-based applications are a class of Mac OS X applications that allow the user to create, save, and open documents. Since this is a common type of application, Cocoa provides a lot of the common architecture, or plumbing, to minimize the amount of code the developer has to write.

Archiving

Before we talk about the user interface help that Cocoa provides for document-based applications, we're going to start from the back-end and talk about saving and loading objects. The Foundation framework provides a mechanism for converting a collection of objects to a sequence of bytes called *archiving*. Once we have the objects as a sequence of bytes, these bytes can be stored on disk or even sent across the network. To recreate the collection of objects from the sequence of bytes, you can use a mechanism called *unarchiving*. In Java, this conversion of objects to and from bytes is called *serialization*.

Before we get into the nitty-gritty, we need to cover some more terminology. A collection of objects has a fancy name called *object graph*. An object graph is a collection of

objects, along with the relationship between the objects. An object graph can be represented as a diagram showing each object, with arrows indicating relationships. For example, if we have an `NSMutableArray` object that contains three `Rectangle` objects, the object graph would look like Figure 1. The arrows point from the array to the rectangles because the array maintains a reference to each of its members. Often, an object graph contains one object that is at the top of the graph called the *root object*. In this case, the array is the root object.

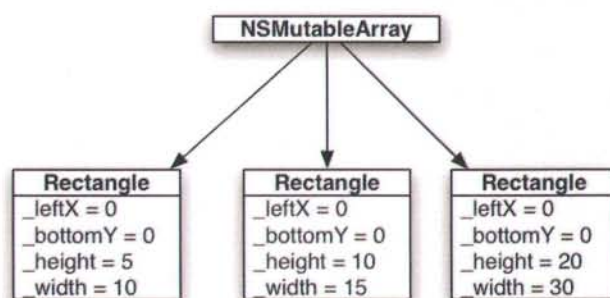


Figure 1: Simple object graph

Recall from the article about inheritance, *You Have Your Mother's Eyes*, that Objective-C has a concept called a *protocol*. As a quick refresher, protocols are just like class interface declarations, except that there are no instance variables. Protocols also have no implementation. Other classes may *implement* protocols, and these classes must provide implementations to all required methods. Protocols are used to ensure a class implements a set of methods.

Encoding

Foundation's archiving and unarchiving works on object graphs. Not all objects may be archived, however. Only objects that implement the `NSCoding` protocol may be archived and unarchived. The `NSCoding` protocol is shown in Listing 1.

Listing 1: NSCoding protocol

```
@protocol NSCoding

- (void)encodeWithCoder:(NSCoder *)coder;
- (id)initWithCoder:(NSCoder *)decoder;

@end
```

The `encodeWithCoder:` method is used for archiving while `initWithCoder:` is used for unarchiving. You'll notice that both of these methods use a class called `NSCoder`. `NSCoder` and its subclasses are responsible for the actual transformation to and from bytes. An example will help clear this up. Let's modify our `Rectangle` class

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to work with archiving. The most recent interface for Rectangle from the last article is shown in Listing 2.

Listing 2: Rectangle interface, without NSCoder support

```
#import <Foundation/Foundation.h>

@interface Rectangle : NSObject
{
    float _leftX;
    float _bottomY;
    float _width;
    float _height;
}

@property float leftX;
@property float bottomY;
@property float width;
@property float height;
@property (readonly) float area;
@property (readonly) float perimeter;

- (id) initWithLeftX: (float) leftX
      bottomY: (float) bottomY
      rightX: (float) rightX
      topY: (float) topY;

@end
```

Since Rectangle's superclass, NSObject, does not implement the NSCodering protocol, the first step is to tell the compiler that we want to implement the NSCodering by changing the @interface declaration:

```
@interface Rectangle : NSObject <NSCoding>
```

The rest of the header file stays the same. We must now implement `encodeWithCoder:` and `initWithCoder:` or else the compiler will warn us about an incomplete implementation. This warning is very helpful and one of the benefits of statically typed languages. Okay, so how do we implement these methods? Let's start with archiving and `encodeWithCoder:`.

When `encodeWithCoder:` is called on your object, you need to save all your vital instance variables by encoding their values in the coder. Vital instance variables are all instance variables that cannot be calculated in any way. For our Rectangle class, all four instance variables are vital, and we must encode them all. Our implementation would be:

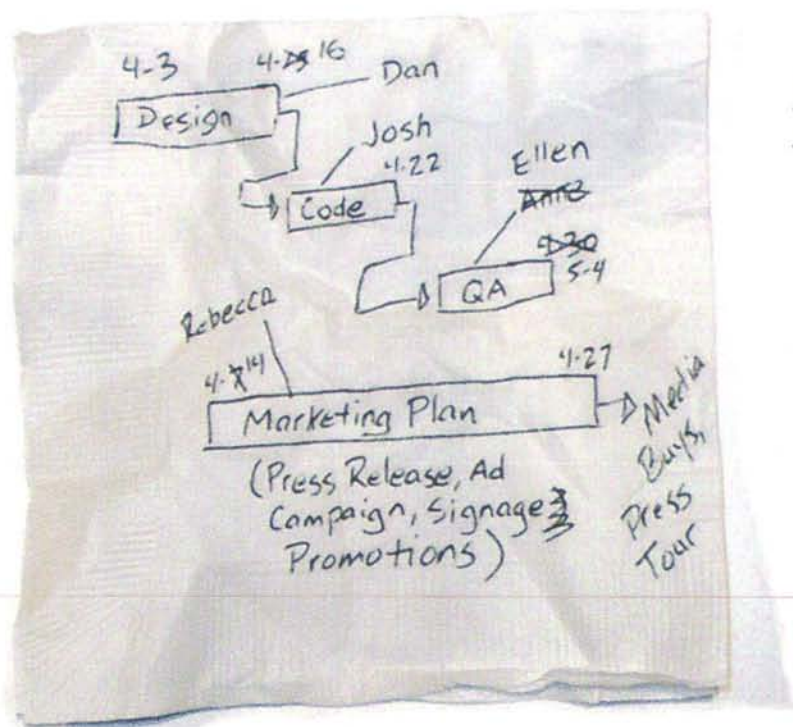
```
-(void) encodeWithCoder: (NSCoder *) coder
{
    [coder encodeFloat: _leftX forKey: @"leftX"];
    [coder encodeFloat: _bottomY forKey: @"bottomY"];
    [coder encodeFloat: _width forKey: @"width"];
    [coder encodeFloat: _height forKey: @"height"];
}
```

We encode each of our instance variables, one by one, using the `encodeFloat:forKey:` method of NSCoder. We are using a variant of encoding called *keyed encoding*. Keyed encoding associates each value with a string key, or name, similar to how NSDictionary maps keys and values. All keys in an inheritance chain must be unique.

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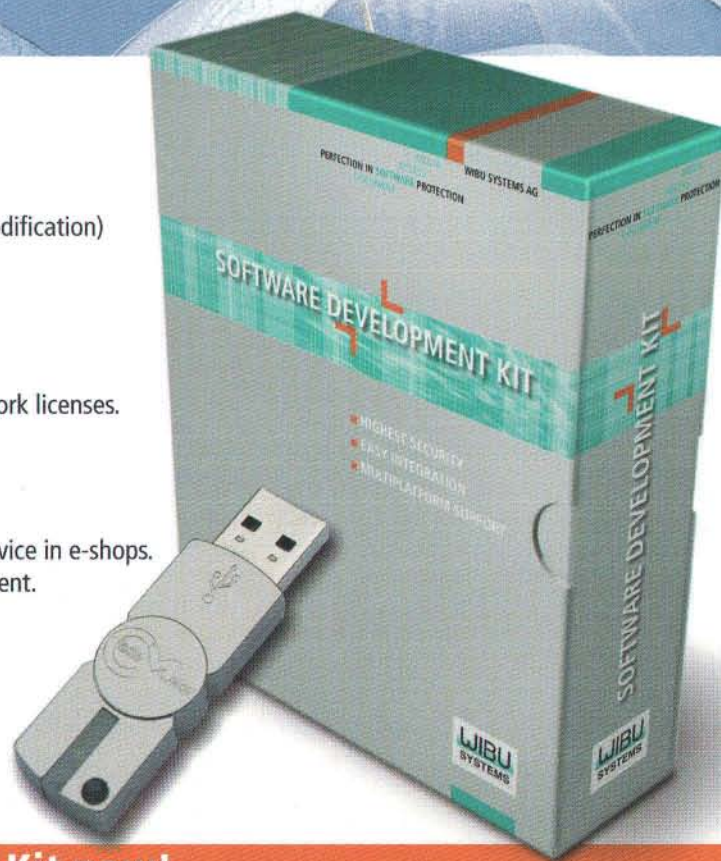
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This means your key must not only be unique to all your encoded values, but also to any of your superclasses' encoded values. The simplest way to ensure this is to use the name of the instance variable. I tend to leave off the underscore prefix, but that's just old habit. Separate inheritance chains can reuse keys. For example a Bitmap class that inherits from NSObject could also encode values using the width and height keys without conflict from Rectangle.

There are encoding methods for all primitive types and for other objects that implement the NSCodering protocol. Many of the classes in the Foundation framework such as strings, arrays, and dictionaries implement NSCodering so you should be able to easily encode all of your instance variables. Don't forget that if your superclass implements NSCodering, you must call `encodeWithCoder:` on the superclass before you encode your instance variables to make sure that all of its instance variables are encoded, as well:

```
- (void) encodeWithCoder: (NSCoder *) coder
{
    [super encodeWithCoder: coder];
    //...
}
```

As a side note, NSCoder does allow encoding values without keys, called *non-keyed encoding*, however this method is no longer recommended. Keyed encoding was introduced in Mac OS X 10.2 and non-keyed encoding

should only be used for legacy applications that either need to run on or interoperate with old versions of software. Since we are writing an application for Mac OS X 10.5, we only use keyed encoding.

To use this method, we need an NSCoder instance. NSCoder is an *abstract class*, meaning that you cannot create instances of it directly; rather, you should use one of its concrete subclasses. The main subclass for encoding is NSKeyedArchiver, and typically, you use one of its class methods that do all the hard work for you:

```
Rectangle * rectangle = ...;
NSData * data =
    [NSKeyedArchiver archivedDataWithRootObject:
rectangle];
```

The NSData class is part of the Foundation framework and it holds a sequence of bytes. Once you have the rectangle represented as an NSData instance, you can write it to disk or send it over a network.

Decoding

Now that we've covered archiving objects by encoding objects with an NSCoder instance, we need to go the other way around. Unarchiving objects takes a sequence of bytes and creates new instances of the encoded objects. To support unarchiving, our class must implement the `initWithCoder:` method. For our Rectangle class, there are no real surprises. We must decode each instance variable using the same key we used for encoding:

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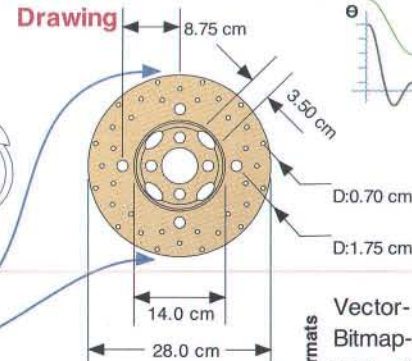
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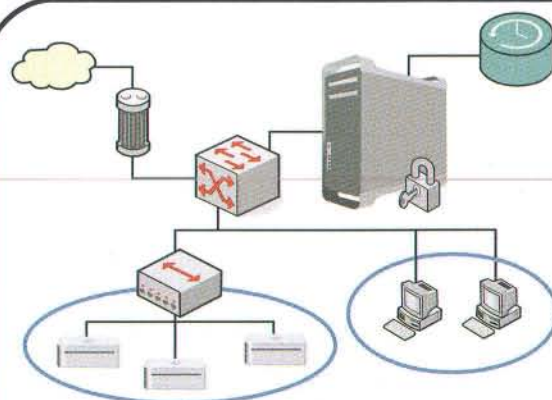
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```

- (id) initWithCoder: (NSCoder *) decoder
{
    self = [super init];
    if (self == nil)
        return nil;

    _leftX = [decoder decodeFloatForKey: @"leftX"];
    _bottomY = [decoder decodeFloatForKey: @"bottomY"];
    _width = [decoder decodeFloatForKey: @"width"];
    _height = [decoder decodeFloatForKey: @"height"];

    return self;
}

```

Note that this is a constructor method and thus creates a new instance of our object. Since our superclass is NSObject and it does not implement NSCoder, we just call init. However, if your superclass also supports NSCoder, be sure to call initWithCoder: instead:

```

- (id) initWithCoder: (NSCoder *) decoder
{
    self = [super initWithCoder: decoder];
    //...
}

```

While you can decode the keys in any order, it's imperative that the keys match up between your encoding and decoding. Also, if you decode any objects, you must remember to retain them if you keep strong references to them as the decodeObjectForKey: returns autoreleased objects. Of course, if you are using garbage collection, you don't have to worry about the retains.

To unarchive objects from a sequence bytes created with NSKeyedArchiver, you should use the NSKeyedUnarchiver, which is also a concrete subclass of NSCoder. It has a convenient class method to unarchive an object directly from an NSData instance:

```

NSData * data = ...;
Rectangle * rectangle =
    [NSKeyedUnarchiver unarchiveObjectWithData:
data];

```

Now that our Rectangle class fully implements the NSCodering protocol, we can convert instances of our class to a sequence of bytes and back again.

Archiving objects has many uses. For example, Interface Builder nib files are really just archived objects. The object graph for your entire GUI is created by Interface Builder and saved as a nib file. When your application runs, the objects are unarchived and ready to use. We will also be using this new ability to create custom rectangle documents using a document-based application.

You may be wondering what happens if we add or remove instance variables to our rectangle class? And what if the newer rectangle class needs to read archives saved by the older rectangle class? The way to handle this is with a technique called *versioning*. Versioning is a bit advanced to cover in full here, but I just wanted to let you know that it is possible to handle this situation. Read Apple's developer documentation for full details.

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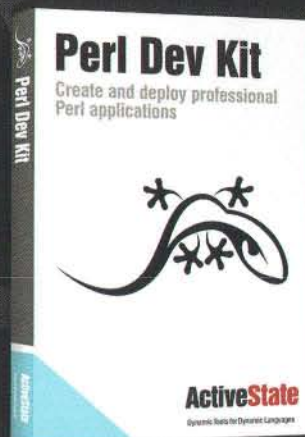
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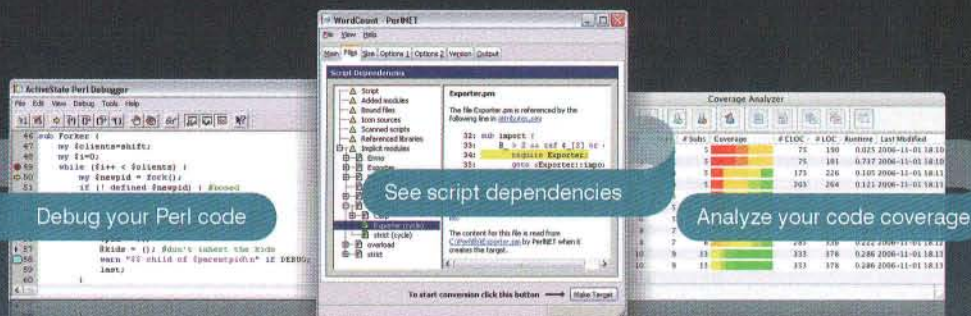
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Document-Based Applications

As I mentioned above, many applications allow the user to create and edit documents, and then save them to and open them from disk. Since this is such a common type of application, Cocoa provides an architecture to help with the common tasks of managing documents. Applications that utilize this architecture are called *document-based applications*. The three classes that make up this architecture are `NSDocument`, `NSWindowController`, and `NSDocumentController` and are found in the Application Kit framework, along with all the GUI classes such as `NSView` and `NSControl`.

For simple cases, you generally don't have to interact with `NSWindowController` or `NSDocumentController`. However, you must always subclass `NSDocument` to implement saving and loading. We're going to walk through a simple document-based application that allows a user to save and load rectangle data.

Xcode has a project template for document-based applications, so we're going to create a fresh project from this template. Select **File > New Project...** from Xcode and choose a **Cocoa Document-based Application** from the **New Project** assistant, as shown in Figure 2. Click **Next**, and create a project named **Rectangles** in the directory of your choice. Finally, enable garbage collection by modifying the project's build settings.

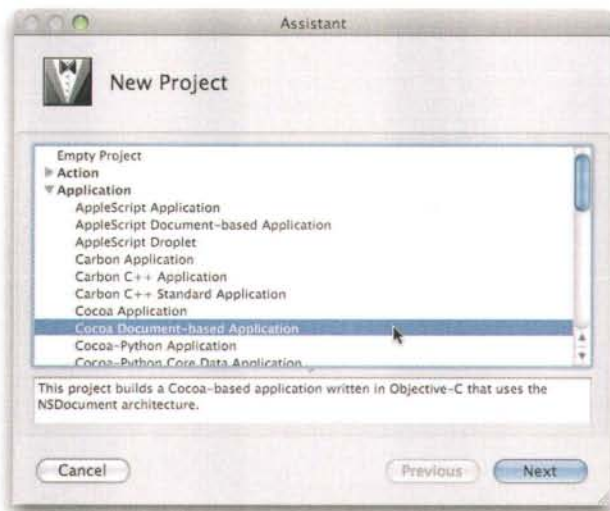


Figure 2: Creating a document-based application

If you take a look at the **Groups & Files** list for this project, you'll notice that it is slightly different than the non-document-based applications we've created so far, as shown in Figure 3. First, it creates a subclass of `NSDocument` called `MyDocument` for us in the **Classes** group. Second, it creates two nib files in the **Resources** group: `MainMenu.nib` and `MyDocument.nib`.

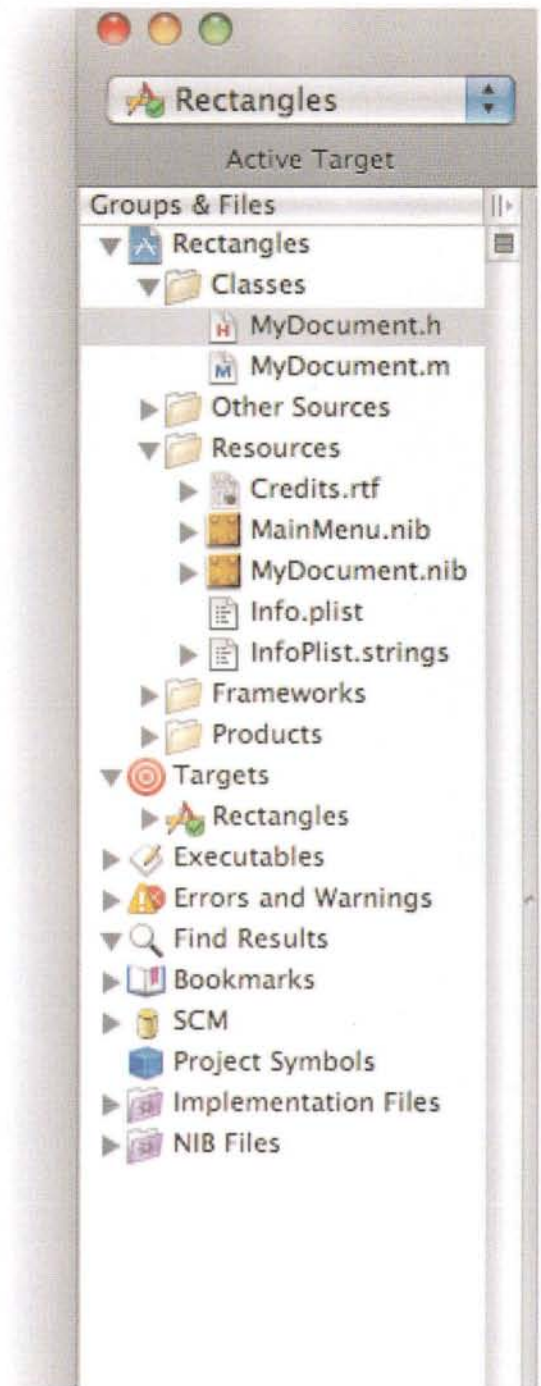
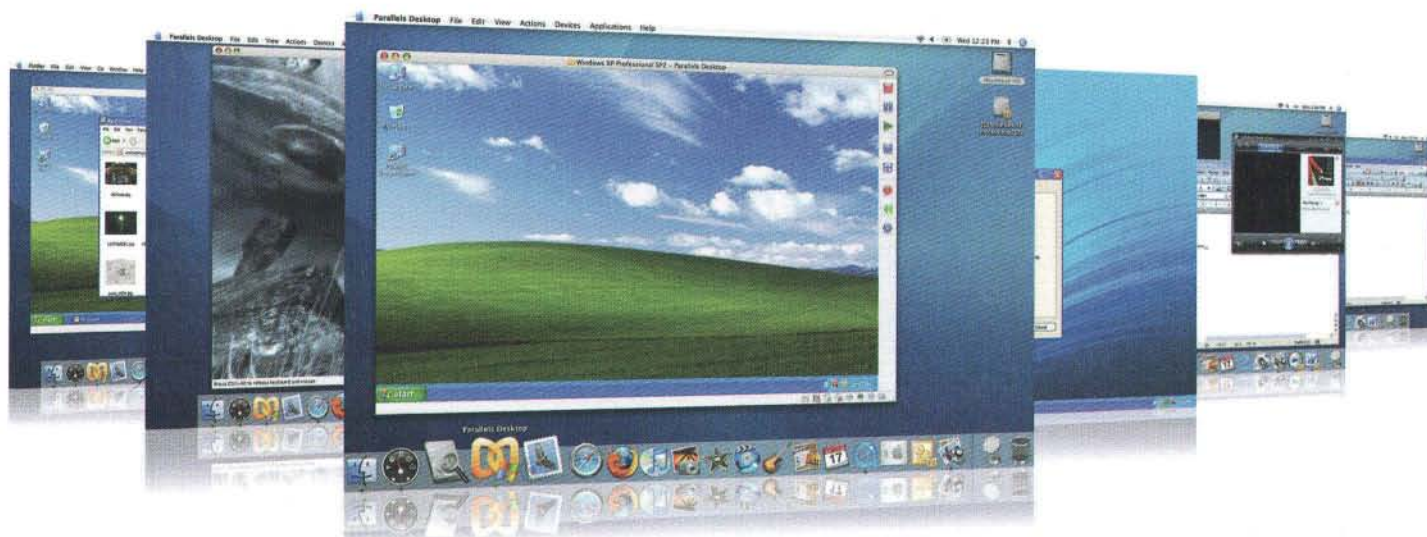


Figure 3: Generated files

We've previously only used a single nib file that contained both the main menu and the single application window. Because we can have multiple document windows open, we use a separate nib file for document windows. Remember that nib files are archived windows, views, and controls, so every time a new document window is created, Cocoa's document architecture unarchives `MyDocument.nib` to create a new window. The `MainMenu.nib` file only gets loaded once at application startup and contains only the menu bar items.

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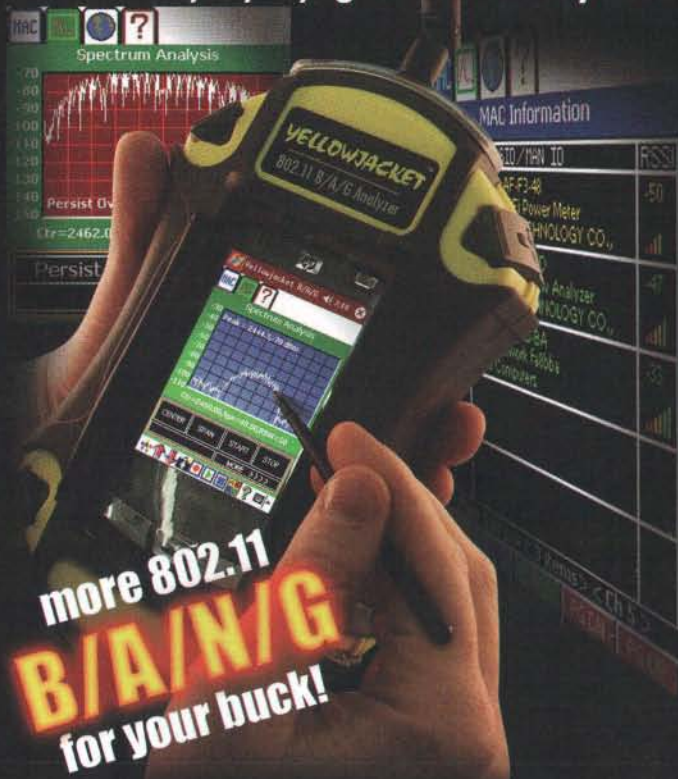


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You can already run the application as-is, but it's quite limited. First, the window contains a nice message that you are supposed to add your own controls to it. Also, saving and loading are not implemented, and you get an error if you try and save. You can, however, create new documents using File > New or Command-N.

Creating the User Interface

We're going to start by making the document window look just like the window of our Hello World application. Figure 4 shows the final result. Open MyDocument.nib with Interface Builder and layout the controls and formatters like we did before. Also setup the proper resizing springs and struts. (See last month's article if you need a reminder of how to do this.)

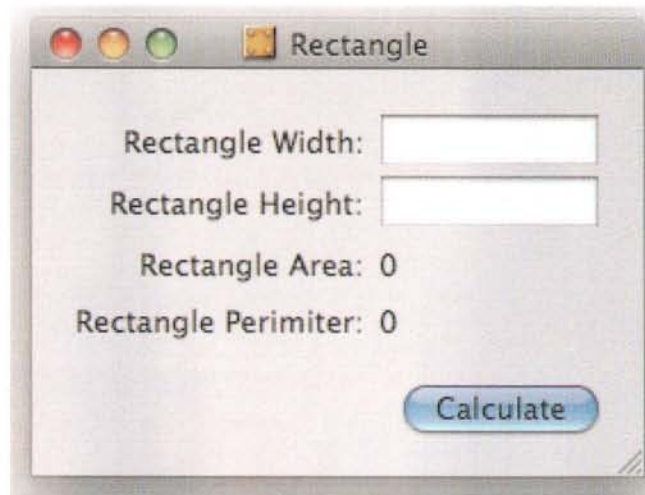


Figure 4: MyDocument.nib window

The MyDocument class takes the place of HelloWorldController from the previous articles. It contains all the outlets and actions for the window. Add outlets for the four text fields, a calculate action, and an instance variable for a single rectangle, as shown in Listing 3:

Listing 3: MyDocument.h

```
#import <Cocoa/Cocoa.h>

@class Rectangle;

@interface MyDocument : NSDocument
{
    IBOutlet NSTextField * _widthField;
    IBOutlet NSTextField * _heightField;
    IBOutlet NSTextField * _areaLabel;
    IBOutlet NSTextField * _perimeterLabel;

    Rectangle * _rectangle;
}

- (IBAction)calculate:(id)sender;

@end
```


Now save **MyDocument.h**, and go back to Interface Builder. Connect up the outlets and actions to the appropriate controls. The **File's Owner** is setup to be our document class, **MyDocument**, so use this when connecting the outlets and actions.

Now, add the **Rectangle** class that we modified to support **NSCoding** protocol above to this project. In **MyDocument**, change the **init** method, and add the **calculate:** and **updateAreaAndPerimeter** methods to match this:

```
- (id)init
{
    self = [super init];
    if (self == nil)
        return nil;

    _rectangle = [[Rectangle alloc] initWithLeftX: 0
                                                bottomY: 0
                                                rightX: 5
                                                topY: 5];
}

return self;

- (void)updateAreaAndPerimeter
{
    [_areaLabel setFloatValue: _rectangle.area];
    [_perimeterLabel setFloatValue:
_rectangle.perimeter];
}

- (IBAction)calculate:(id)sender
{
    _rectangle.width = [_widthField floatValue];
    _rectangle.height = [_heightField floatValue];
    [self updateAreaAndPerimeter];
}
```

This creates a new rectangle instance in the constructor and also implements the **calculate:** action. Remember, though, that we needed to implement the **awakeFromNib** to ensure the text fields and labels were correct on application launch. For **NSDocument** subclasses, you override the **windowControllerDidLoadNib:** instead of **awakeFromNib**. Their purpose is very similar, though, and allows you to execute code after the outlets and actions from the nib have been connected. Modify the supplied stub implementation to match this:

```
- (void>windowControllerDidLoadNib:(NSWindowController *)
aController
{
    [super windowControllerDidLoadNib:aController];
    [_widthField setFloatValue: _rectangle.width];
    [_heightField setFloatValue: _rectangle.height];
    [self updateAreaAndPerimeter];
}
```

Now build and run the application. You should see a window similar to Figure 5. The initial width should be five and height should be ten. If you change the width or height and press the **Calculate** button, the area and perimeter should update accordingly.

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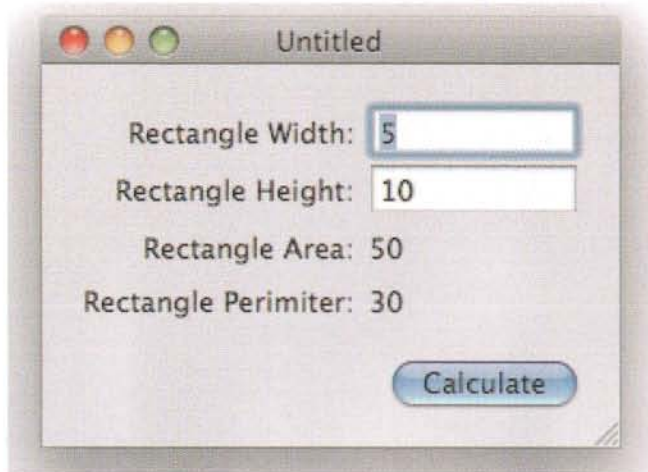


Figure 5: Running document window

This works like our first Hello World application. However, you can now create new windows with the **File > New** menu. We now want to implement saving and loading of documents.

Registering File Extensions

In order to identify our new file types, we need to come up with a new file extension. Since our document contains a single rectangle, let's use ".rectangle" as our file extension. We need to tell the operating system that our application can load and save files with this extension. This is done by editing the properties of our application. Open up the **Targets** group in the **Groups & Files** section of the project. Double click on the **Rectangles** target to bring up the **Info** panel for our application. Change to the **Properties** tab of the **Info** panel.

There are a couple of important properties we need to change. First, we need to change the identifier. Identifiers must be unique for every application released on Mac OS X. The recommended way to do this uses so-called *reverse DNS notation*. DNS is how websites are named. For example, my personal website is at www.dribin.org. The technical name for this website address is the *DNS name*. DNS names are unique, i.e. there is one and only one dribin.org out there. Reverse DNS takes advantage of the uniqueness of website names. It's called reverse DNS because you list the components in the opposite order that you use them for websites. The default value is **com.yourcompany.Rectangles**, which may be fine for testing, but you should really change it to a properly unique name.

Let's change it to
org.dribin.dave.mactech.jul08.rectangles.

Next, we need to change the document types for our application. The **Document Types** list should already have one document type in it. Edit it so that the name is **Rectangle File** and that the extension is **rectangle** (do not include the period). The final result should look similar to Figure 6.

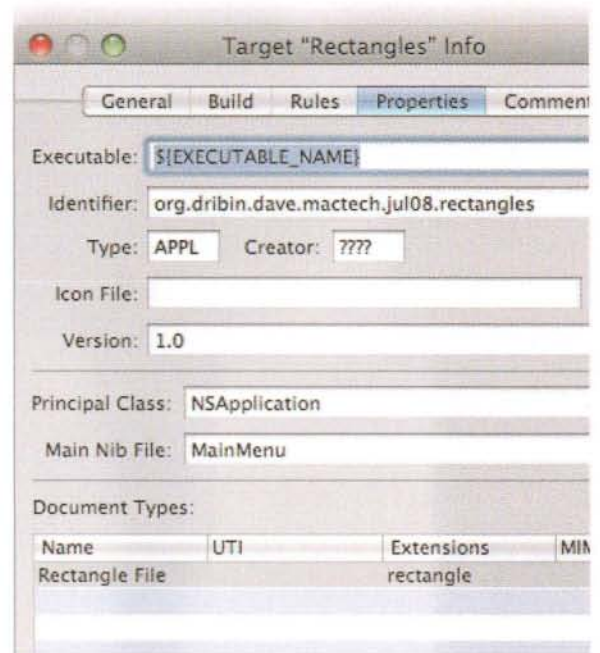


Figure 6: Application properties

These application properties are stored in a file called **Info.plist**. You can see this file in the **Resources** group. This file gets included along with your built application. How this works is beyond the scope of this article, but suffice it to say that applications on Mac OS X are really directories with a special structure called *bundles*. We will talk more about bundles in a later article.

One word of warning: I find that whenever I change the application's properties or **Info.plist** file, I need to force Xcode to rebuild the whole application. You do this by using the **Build > Clean All Targets** menu item. Cleaning removes all files generated during the build process. By cleaning the target, you force the next build to rebuild everything. Be sure to clean your project before proceeding.

Saving and Loading

With our file extension in place, we can now proceed to implement saving and loading of rectangle files. The **MyDocument** class already contains stub methods for saving and loading that we need to fill in. Saving is handled by the `dataOfTypeError:` method. You are supposed to return an **NSData** representation of your document, and the document architecture will take care of writing it to a file. The default implementation returns `nil` and sets an error.

The only data we need to save is our `_rectangle` instance variable. Since the **Rectangle** class now implements the **NSCoding** protocol, we can use an **NSKeyedArchiver** to convert our instance variable into **NSData**:

```
- (NSData *)dataOfTypeError:(NSString *)typeName
    error:(NSError **)outError
{
    NSData * rectangleData =
```


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```

[NSKeyedArchiver
archivedDataWithRootObject:_rectangle];
return rectangleData;
}

```

In order to load rectangle files, we need to implement the `readFromData ofType:error:` method. We can use `NSKeyedArchiver` to convert the supplied `NSData` to an `NSRectangle` and store it in our instance variable:

```

- (BOOL)readFromData:(NSData *)data
  ofType:(NSString *)typeName
  error:(NSError **)outError
{
    _rectangle = [NSKeyedUnarchiver
unarchiveObjectWithData:data];
    return YES;
}

```

If you are not using garbage collection, be sure to release the old rectangle and retain the new one.

With these two methods implemented, you should be able to save and open rectangle files. Give it a shot. The files should have the ".rectangle" extension we setup, too. You can even double click on saved rectangle files in the Finder, and it should automatically launch our application. As always, the completed project may be downloaded from the MacTech website.

Well, that's pretty much all there is to a document-based application. Due to the document architecture, there's really not that much extra code to write compared to non-document-based applications. Our `MyDocument` class is very similar to the `HelloWorldController` we wrote earlier. We just needed to

add methods to save and load files, and that's really easy if the classes to be saved can be archived.

Given that we only had to implement two extra methods, we get a lot of functionality "for free" from the Cocoa document architecture:

A file open sheet is created when the user chooses **File > Open...**

A file save sheet is created when the user choose **File > Save** or **Save As...**

Saving and loading to and from disk is handled automatically

The window title changes to the name of the document

The document-based architecture really shows how Cocoa helps the developer write applications faster with less code. You can also get undo support easily, but that will have to wait for a future article.

M

About The Author



Dave Dribin has been writing professional software for over eleven years. After five years programming embedded C in the telecom industry and a brief stint riding the Internet bubble, he decided to venture out on his own. Since 2001, he has been providing independent consulting services, and in 2006, he founded Bit Maki, Inc. Find out more at <<http://www.bitmaki.com/>>

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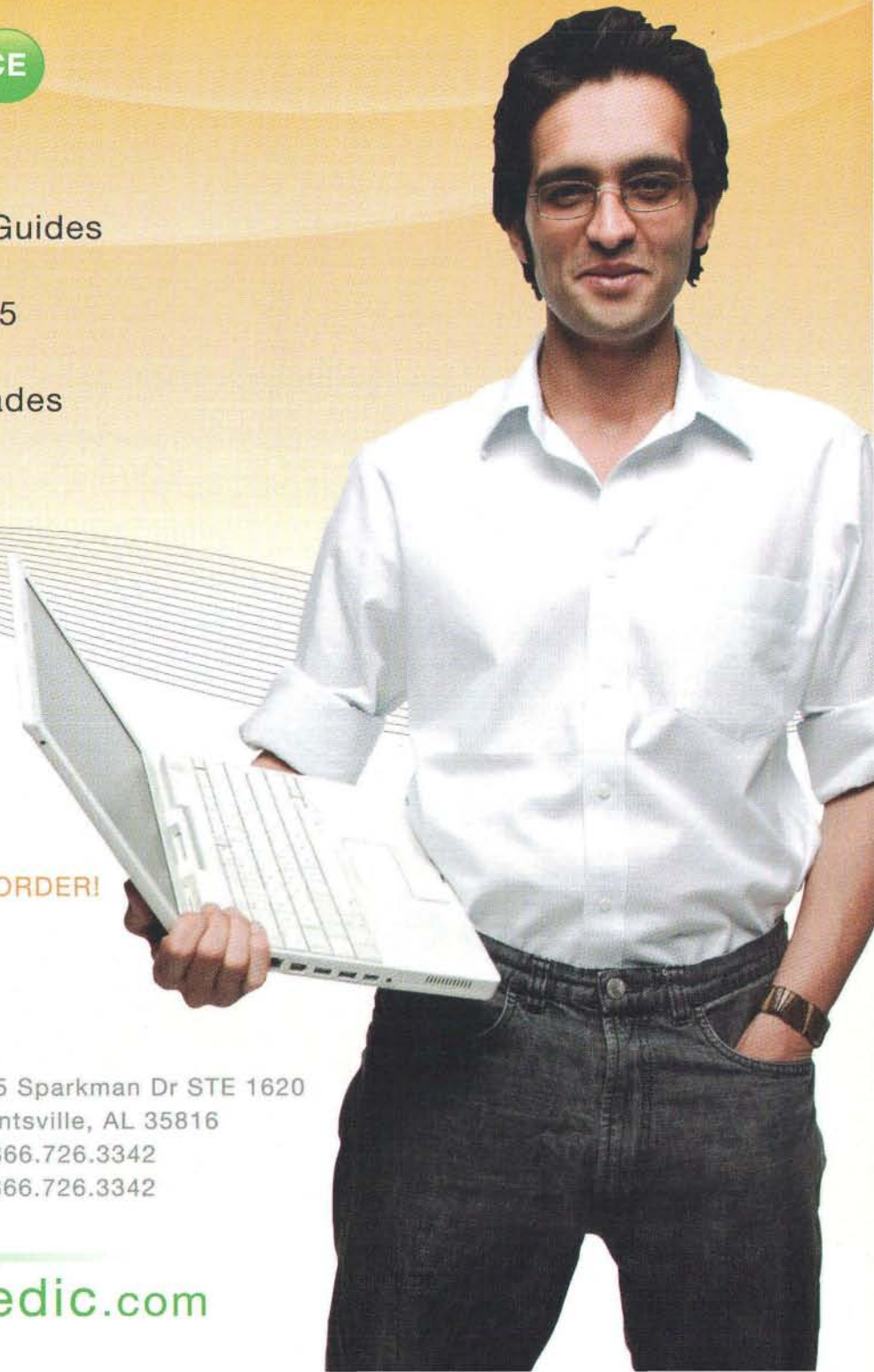
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Creating a Dashboard Widget that Processes an RSS Feed

What is an RSS feed and how do I process it from within a Dashboard Widget?

by Mihalis Tsoukalos

Article Overview

A Dashboard Widget, named “GetRSS” Widget, that uses the RSS technology, is going to be programmed in this article using JavaScript, CSS and HTML code as well as some PNG image files. The “GetRSS” Widget uses the XMLHttpRequest object from the JavaScript programming language to get data from the MacTech RSS feed and present it in a Dashboard Widget fashion.

Because of the unknown amount of the incoming RSS data, this Widget needs to include a scroll bar—a forthcoming article is going to fully present the scroll bar technique. For the purposes of this article, only RSS-related material is going to be explained.

Also, the presented Widget has a backside! Combining two or more techniques is relatively simple as long as you already know how to use each one of them in isolation.

What is RSS?

RSS (Really Simple Syndication) is a Web content syndication format. RSS is a dialect of XML (Extensible Markup Language) and all RSS files must conform to the XML 1.0 specification. It is extensively used by news websites, weblogs and podcasting. The RSS protocol transfers information in an XML file format that is called RSS feed, RSS stream, webfeed or RSS channel.

Two most important advantages of RSS are that the RSS information is transferred as plain text, and that you can use a news aggregator to automatically get the updated information.

A news aggregator is a category of software that can get RSS feed information and present it to the user. Aggregators trim down the time and effort required for frequently checking the websites you want for updates. Using an

aggregator you can subscribe to an RSS feed that it will check for new content at user-determined intervals, and retrieve the new content without further human intervention.

The following is a small part of RSS code, taken from MacTech's News RSS:

(<http://www.mactech.com/news/mactech.rss>):

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- generator="wordpress/1.5" -->
<rss version="2.0"

xmlns:content="http://purl.org/rss/1.0/modules/content/"
xmlns:wfw="http://wellformedweb.org/CommentAPI/"
xmlns:dc="http://purl.org/dc/elements/1.1/"
>

<channel>
  <title>MacTech News</title>
  <!--
  [[link]][[?php bloginfo_rss('url') ?]][[/link]]
  -->
  <link>http://www.mactech.com/</link>
  <description>MacTech News is the source of news,
  information, updates and special offers specifically for
  the Mac technical community.</description>
  <pubDate>Fri, 14 Mar 2008 14:30:31 -0800</pubDate>
  <generator>http://wordpress.org/?v=1.5</generator>
  <language>en</language>

  <item>
    <title>OWC Announces Mercury Elite-AL Pro
    Firewire+USB2 1TB Drives</title>
    <link>http://www.mactech.com/news/?p=1010258</link>
    <comments>http://www.mactech.com/news/?p=1010258#comments<
    /comments>
    <pubDate>Fri, 14 Mar 2008 06:30:31 -0800</pubDate>
    <dc:creator>Administrator</dc:creator>
```



```

<category>Breaking News</category>
<guid>http://www.mactech.com/news/?p=1010258</guid>
<description><![CDATA[OWC ANNOUNCES NEW MERCURY
ELITE-AL PRO FIREWIRE+USB2 1 TB STORAGE DRIVES

=46ast, Economical FireWire+USB 2.0 Combo External Drive
Solutions Feature
New Oxford 934 Chipset and the Latest SATA Technology

Woodstock, IL, March 14, [...]]]></description>
<wfw:commentRSS>http://www.mactech.com/news/wp-
commentsrss2.php?p=1010258</wfw:commentRSS>
</item>
<item>
<title>New Take Control Ebook Helps Switch from PC
to Mac</title>
<link>http://www.mactech.com/news/?p=1010257</link>

<comments>http://www.mactech.com/news/?p=1010257#comments<
/comments>

```

The listing above will help you understand the RSS feed format. The first line dictates that you are using XML version 1.0 with UTF-8 Unicode character encoding. The second and third line tells that you are using RSS version 2.0 code that is created using the WordPress semantic personal publishing software (line 2). The other lines tell you where you can find the definitions of the various standards. You can also find out that each entry (or record) is included inside the <item> tag and consists of the following tags: <title>, <link>, <comments>, <pubDate>, <dc:creator>, <category>, <guid>, <description> and <wfw:commentRSS>. You will later have to decide which of the information you want to include inside your Widget's output.

Which files compose the complete GetRSS Widget?

The files that compose the GetRSS Widget are the following:

1. Info.plist: a file necessary for every Widget.
2. GetRSS.html: the main HTML file for the "GetRSS" Widget.
3. GetRSS.js: the JavaScript code needed for the "GetRSS" Widget.
4. GetRSS.css: the CSS file needed for formatting the Widget.
5. Two image files called Default.png and Icon.png. Every Dashboard Widget has these two graphics files. The Icon.png file should be 82x82 pixels and is displayed in the Dashboard Widget Bar.
6. Some other files and directories that will be shown later on.

The Info.plist file

The contents of the Info.plist file are the following:

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple Computer//DTD PLIST
1.0//EN"
"http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">

```

```

<dict>
<key>AllowNetworkAccess</key>
<true/>
<key>BackwardsCompatibleClassLookup</key>
<true/>
<key>CFBundleIdentifier</key>
<string>com.mtsouk.widget.getrss</string>
<key>CFBundleName</key>
<string>GetRSS</string>
<key>CFBundleShortVersionString</key>
<string>2.0</string>
<key>CFBundleVersion</key>
<string>200</string>
<key>CloseBoxInsetX</key>
<integer>8</integer>
<key>CloseBoxInsetY</key>
<integer>7</integer>
<key>MainHTML</key>
<string>GetRSS.html</string>
</dict>
</plist>

```

The GetRSS.html file

The contents of the GetRSS.html can be found in the archive for this article at ftp.mactech.com/src/mactech/volume24_2008/24.07.sit. It should be noted that the GetRSS.html file acts as the glue that connects all the other Widget files. It is also easy to understand that the GetRSS.html file contains uncomplicated HTML code. Most of its code is typical and is included in every Widget that uses certain Dashboard features.

The GetRSS.css File

The contents of the GetRSS.css file can be found in the source archive for this column found at ftp.mactech.com/src/mactech/volume24_2008/23.07.sit. The CSS code may look big and complex, but this is not the case. Most of the CSS code is standard for widgets, and is repeated in every widget that has a backside and a scroll bar.

The GetRSS.js File

The GetRSS.js file is the most important file of the whole Widget. A small mistake in it and the Widget will either misbehave or not work at all. Its contents are also in the archive for this article. Later in, "Explaining the Technique," will further explain the technique and you will better understand the JavaScript code.

Before continuing with the rest of the article, I will have to tell you a little problem that I had with this particular Widget. I first wrote this Widget using Mac OS X 10.4 and it worked fine. When I got the Mac OS X 10.5 DVD and first tried the Widget, it did not work as expected. When I pressed on a link, the link was not working. The following JavaScript code (the output of the *diff* UNIX utility) shows a small modification that I made for the Widget to work:


```

< widget.openURL (div.the_link);
< } else document.location = div.the_link;
--
> widget.openURL(div.getAttribute('the_link'));
> }
> else
> document.location = div.getAttribute('the_link');

```

It turns out that the *div.the_link* code was not working as expected in Leopard. I had to use *div.getAttribute('the_link')* instead for the Widget to work. In Tiger, those notations were, more or less, equivalent.

The full list of the “GetRSS” Widget files

The following is the full list of the files that compose the “GetRSS” Widget.

```

drwxr-xr-x  AppleClasses
-rw-r--r--  Default.png
-rw-r--r--  GetRSS.css
-rw-r--r--  GetRSS.html
-rw-r--r--  GetRSS.js
-rw-r--r--  Icon.png
drwxr-xr-x  Images
-rw-r--r--  Info.plist

```

```

./AppleClasses:
AppleAnimator.js

```

```

AppleButton.js
AppleInfoButton.js
AppleScrollArea.js
AppleScrollbar.js
Images/

```

```

./AppleClasses/Images:
scroll_thumb_hleft.png
scroll_thumb_hmid.png
scroll_thumb_hright.png
scroll_thumb_vbottom.png
scroll_thumb_vmid.png
scroll_thumb_vtop.png
scroll_track_hleft.png
scroll_track_hmid.png
scroll_track_hright.png
scroll_track_vbottom.png
scroll_track_vmid.png
scroll_track_vtop.png
slide_thumb.png
slide_track_hleft.png
slide_track_hmid.png
slide_track_hright.png
slide_track_vbottom.png
slide_track_vmid.png
slide_track_vtop.png

```

```

./Images:
BackSide.png
background.png
dark.png
light.png
top.png
well.png

```

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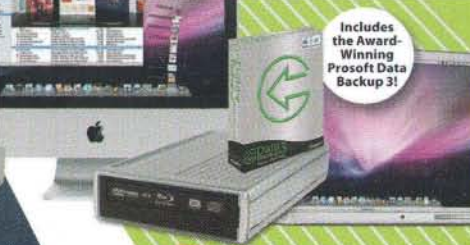
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NOTE: You can find the JavaScript files contained in the AppleClasses directory of the Widget inside the /System/Library/WidgetResources/AppleClasses/ directory. You will also find the ./AppleClasses/Images directory along with its contents there.

Figure 1 shows the image files that can be found inside the ./Images directory of the Widget.

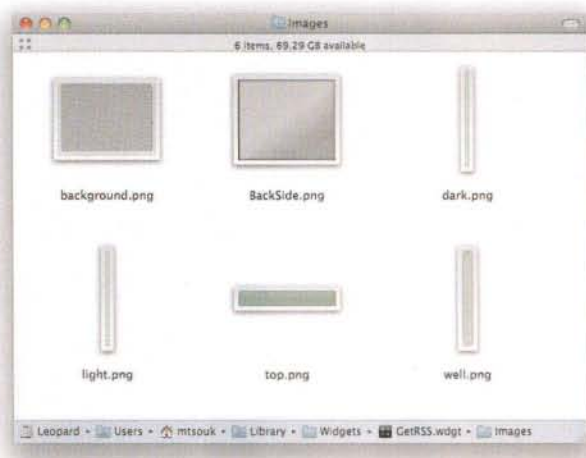


Figure 1: The images of the ./Images directory

The files found inside the AppleClasses/Images directory of the Widget are provided by Apple and can be found in /Developer/Applications/Dashcode.app/Contents/Resources/AppleClasses/Images/ on a Leopard system—provided that you have Dashcode installed.

Explaining the technique

The most challenging part of this Widget is the GetRSS.js JavaScript file. The following function, called load() does the necessary initializations of the JavaScript objects.

```
function load()
{
    scrollbar = new
    AppleVerticalScrollbar(document.getElementById("myScrollBar"));

    scrollArea = new
    AppleScrollArea(document.getElementById("contents"),
    scrollbar);

    scrollArea.scrollsHorizontally = false;
    scrollArea.singlepressScrollPixels = 15;

    whiteInfoButton = new
    AppleInfoButton(document.getElementById("flipper"),
    document.getElementById("front")."white", "white",
    showBack);
```



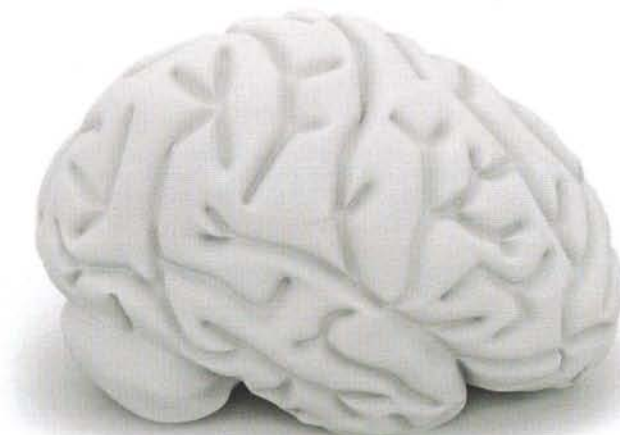
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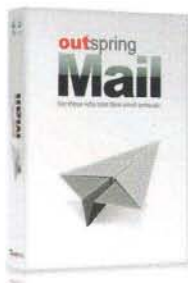


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```

glassButton = new
AppleGlassButton(document.getElementById("doneButton"),
"Done", showFront);

window.onfocus = function () { scrollArea.focus(); }
window.onblur = function () { scrollArea.blur(); }

if (!window.widgit)
{
    show();
}
}

```

An attention-grabbing JavaScript function is the show() function which is defined as follows:

```

function show ()
{
    var now = (new Date).getTime();

    // only check if 15 minutes have passed
    if ((now - last_updated) > 900000)
    {
        if (xml_request != null)
        {
            xml_request.abort();
            xml_request = null;
        }
        xml_request = new XMLHttpRequest();

        xml_request.onload = function(e) {xml_loaded(e,
xml_request);}
        xml_request.overrideMimeType("text/xml");
        xml_request.open("GET", feed.url);

```

```

        xml_request.setRequestHeader("Cache-Control",
"no-cache");
        xml_request.send(null);
    }
}

```

The 900000 time value—it represents the minimum refresh time value—is in milliseconds and is therefore equivalent to 15 minutes (900000/1000 = 900 seconds. 900 / 60 = 15 minutes). Then, a new XMLHttpRequest() object is defined. This object holds the RSS feed data after is processed by the xml_loaded(e, request) function. The xml_loaded(e, request) function extracts the data from the required RSS feed fields using the following JavaScript code:

```

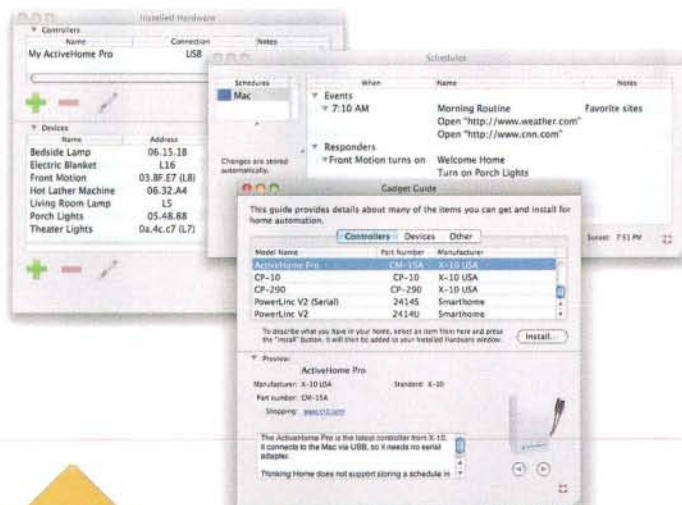
for( var item = channel.firstChild; item != null; item =
item.nextSibling)
{
    if( item.nodeName == 'item' )
    {
        var title = findChild (item, 'title');

        // we have to have the title to include the item
in the list
        if( title != null )
        {
            var link = findChild (item, 'link');
            var pubDate = findChild (item, 'pubDate');
            results[results.length] =
{title:title.firstChild.data,
link:(link != null ?
link.firstChild.data : null),
date:new

```

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```

Date(Date.parse(pubDate.firstChild.data))
    };
}
}

```

The above JavaScript code parses the RSS feed and mines the wanted information. It only looks for the <item>, <title>, <link> and <pubDate> tags and their respective data.



Figure 2: The "GetRSS" Widget look

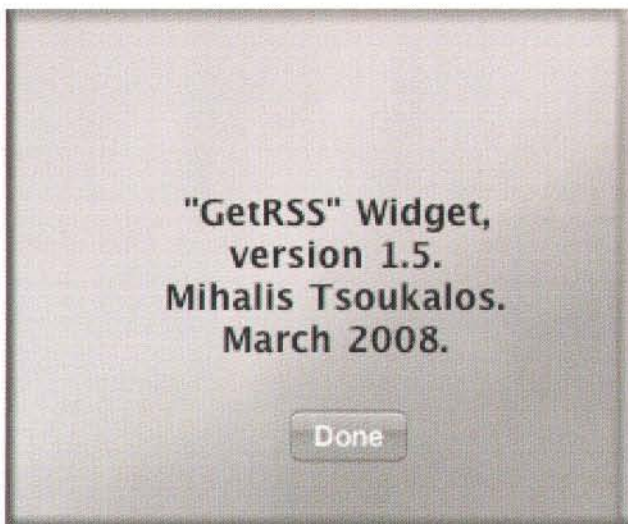


Figure 3: The backside of the Widget

It is also both interesting and educational to look at the clickOnTitle(event, div) function definition that introduces the widget.openURL() function.

```

function clickOnTitle(event, div)
{

```

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```

if (window.widget)
{
    widget.openURL(div.getAttribute('the_link'));
}
else
    document.location = div.getAttribute('the_link');
}

```

The widget.openURL() method opens the given URL in the (default) web browser which resides outside Dashboard.

Inside the JavaScript code you saw some `alert()` function calls which are the best technique for debugging Widgets. `alert()` output is written to the Console. Please remember to remove your `alert()` function calls when you finish debugging or otherwise your Console logs may become too crowded.

Conclusions

Using a Widget to read RSS feeds is a very valuable technique, especially now that Widgets are getting more and more popular. It is also an efficient way of keeping a close eye on an RSS feed without having to open a dedicated browser window. Finally, please note: The RSS-related code of this article is heavily based on the "Sample RSS" Widget code that is provided by Apple in the "/Developer/Examples/Dashboard/Sample RSS" directory of a Tiger system. Strangely enough, Leopard does not have the "/Developer/Examples/Dashboard" directory with the

Widget examples. Also note that the "Sample RSS" Widget does not have a backside.

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Mihalis Tsoukalos lives in Greece with his wife Eugenia and enjoys digital photography and writing articles. He is the author of the "Programming Dashboard Widgets" eBook. You can reach him at tsoukalos@sch.gr.

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Enhancing Your Application with NSStatusItem

How to Utilize the NSStatusItem API to add functionality

by Marcus S. Zarra

Introduction

The user interface is arguably the hardest part of any application. This is especially true on OS X because we, as users, demand more of the developers of our applications. If the developer adds too many features and UI elements, then the application feels too busy or complicated. However if too few features are added then application is too primitive or simple.

Fortunately there are some choices. An application that would be considered too simple for the Dock might be perfect on the Dashboard or on the Menu Bar. Likewise, an application that is too busy to be a Dashboard widget might very well be perfectly at home in the Dock. But what if you are in the grey area between the Dock and the Menu Bar? While the design choices between these options is choices between these options are beyond the scope of this article, I will present how to add a Menu Bar item – also known as a menu extra, menu item or menulet – to to your application and how to control it.

Menu Bar Items: Two Different Beasts

There are two different kinds of objects that can be placed on the menu bar in the upper right corner. First there is the kind that only Apple is allowed allows. The API is private and at the time of this article, third party developers are discouraged from using them.

The second kind that developers *are* encouraged to use is the NSStatusItem API. The NSStatusItem behaves decidedly different than the internal API that Apple uses. First, NSStatusItem objects cannot be dragged around the menu bar; second they cannot be removed from the menu bar with the mouse; and lastly, they are more “sluggish” than the Apple internal items when another item on the bar is moved or removed.

However, they are still an extremely useful UI element that can be utilized to great effect. The basic concept behind them

is that they are a menu with an icon. In that respect, their behavior is very similar to NSMenuItem objects.

Building an NSStatusItem

While it is possible to build an NSStatusItem 100% in code, I prefer to use Interface Builder wherever whenever possible. This makes localizations easier and reduces the amount of code I need to maintain. Therefore, the first step to building an NSStatusItem is to build its menu in Interface Builder.

Building the Menu

To add a new menu to the project, I open the MainMenu.xib file and drag in a new NSMenu object (See Image 1). I normally rename the new menu to “Status Menu” or something similar to keep it clear which menu is which.

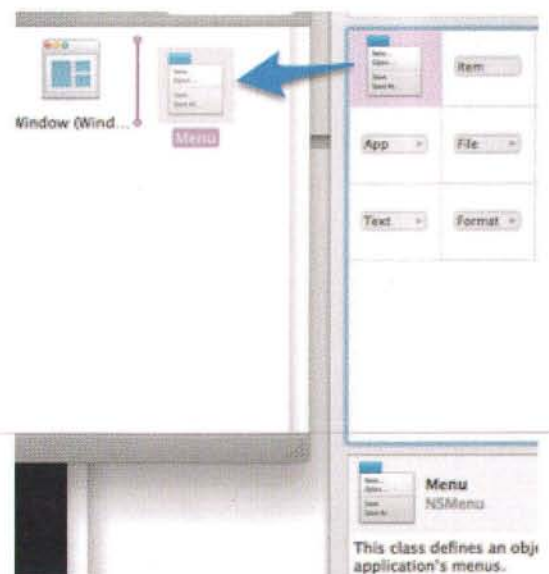


Image 1: Drag a new NSMenu into the nib



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When an NSMenu is first added it contains three menu items. These items can be added to, removed from and changed as needed. For this example, I have changed the menu so that it has four items: Status, a separator, About and Quit. When I am done the menu looks like Image 2.

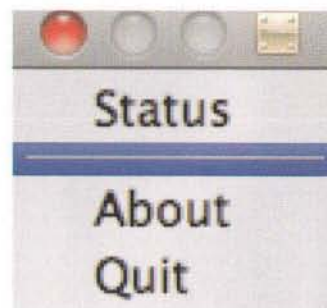


Image 2: The finished menu in IB

Now that the menu itself is complete it is time to write some code. For this example, the AppDelegate of my project will be responsible for the NSStatusItem. First, the header:

AppDelegate.h

```
#import <Cocoa/Cocoa.h>
```

```
@interface AppDelegate : NSObject {  
    NSStatusItem *myStatusItem;  
    IBOutlet NSMenu *myStatusMenu;  
    IBOutlet NSMenuItem *myMenuStatusItem;  
}
```

```
@end
```

Since both the about menu item and the quit menu item can be handled outside of the AppDelegate in this example, I have not added IBAction methods for them. Once the header has been written, it is time to go back to Interface Builder and link the references as shown in Image 3.

As for the About and Quit menus, they are linked to the Application object as follows:

About -> NSApplication -orderFrontStandardAboutPanel:

Quit -> NSApplication -terminate:

Once all of the linking is complete, I am done with the work with Interface Builder is complete. Time to move on to the AppDelegate. In this situation I prefer to initialize the NSStatusItem in the applicationDidFinishLaunching: method so that it appears as soon as the application is ready to start receiving events. Depending on an applications particular situation the initialization code can be placed in other locations.

AppDelegate.m

```
#import "AppDelegate.h"
```

```
@implementation AppDelegate
```

```
(void)applicationDidFinishLaunching:(NSNotification*)notification  
{
```

```
    myStatusItem = [[[NSStatusBar systemStatusBar]  
    statusItemWithLength:NSSquareStatusItemLength] retain];
```

```
    NSImage *statusImage = [NSImage imageNamed:@"TheZ.tiff"];
```


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```

[myStatusItem setImage:statusImage];
[myStatusItem setHighlightMode:YES];

[myStatusItem setMenu:myStatusMenu];

[myMenuStatusItem setTitle:NSLocalizedString(@"Special
Status", @"status menu item text")];
}

```

@end

The first thing to notice in this code block is that `NSStatusItem` objects are not initialized directly. Rather, they are requested from an `NSStatusBar` object. The `NSStatusBar` object has a class level method that returns the system status bar from which I can request a `NSStatusItem`.

Once I have my new `NSStatusItem` request is complete, it is possible I am able to set its image, highlight mode and menu. The image is the image that is displayed on the Menu Bar and has a 16x16 resolution image. The highlight mode determines whether or not the image is highlighted when clicked. The default is "NO", which is not appropriate when a menu is attached so I have set it to YES in the sample code. The last call to `myStatusItem` passes it the menu that is constructed and referenced in Interface Builder. This will be the menu that the `NSStatusItem` displays when it is clicked.

The last line of the `applicationDidFinishLaunching:` method is a call to the status menu item that is referenced from Interface Builder. This call changes the text of that menu item. Note that the sample code does not have disabled this menu. Since it does not have a target or action it will be displayed grayed out already so there is no need to disable it.

Controlling The Menu

In various situations it is appropriate to make changes to the `NSStatusItem` or one of its menu items. In this example, I have intentionally linked the `*myStatusMenuItem` ivar to one of the `NSMenuItem` objects on the menu so that it can be changed during the life of the program. To illustrate this change, I added a button to the main window that when clicked would change this menu item:

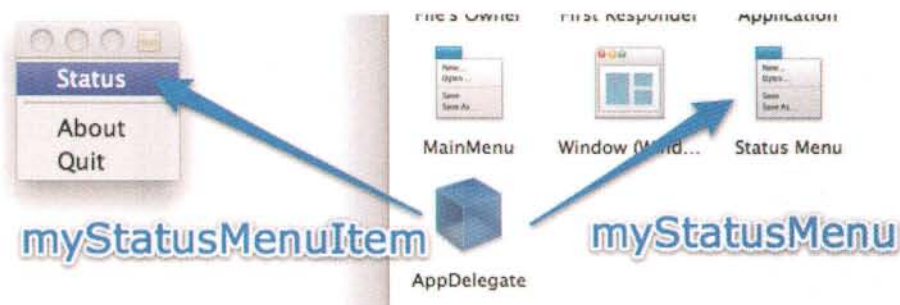


Image 3: Linking the AppDelegate to the Menu



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AppDelegate.h

```
-(IBAction)changeMenu:(id)sender;
```

AppDelegate.m

```
-(IBAction)changeMenu:(id)sender;
```

```
{
    [myMenuItem setTitle:NSLocalizedString(@"Changed
    Status", @"status menu item changed text")];
}
```

With this addition to the application, the status menu item will change to "Changed Status".

It is also possible to change the image that is displayed on the Menu Bar

AppDelegate.h

```
-(IBAction)purpleZ:(id)sender;
```

```
-(IBAction)blackZ:(id)sender;
```

AppDelegate.m

```
-(IBAction)purpleZ:(id)sender;
```

```
{
    [myMenuItem setImage:[UIImage
    imageNamed:@"ThePurpleZ.tiff"]];
}
```

```
-(IBAction)blackZ:(id)sender;
```

```
{
    [myMenuItem setImage:[UIImage
    imageNamed:@"TheZ.tiff"]];
}
```

In the example application, I added these actions are added to the Format menu rather than buttons on the main window.

Lastly, if it is desired to have the `NSStatusItem` as an option rather than a requirement in the application, it is possible to remove the menu item from the bar:

AppDelegate.h

```
-(IBAction)removeStatusItem:(id)sender;
```

```
-(IBAction)addStatusItem:(id)sender;
```

AppDelegate.m

```
-(IBAction)removeStatusItem:(id)sender;
```

```
{
    [[NSStatusBar systemStatusBar]
    removeStatusItem:myStatusItem];
    myStatusItem = nil;
}
```

```
-(IBAction)addStatusItem:(id)sender;
```

```
{
    if (myStatusItem) return;
    myStatusItem = [[NSStatusBar systemStatusBar]
    statusItemWithLength:NSVariableStatusItemLength] retain];
```

```
[myStatusItem setImage:[UIImage
    imageNamed:@"TheZ.tiff"]];
[myStatusItem setHighlightMode:YES];
[myStatusItem setMenu:myStatusMenu];
```

```
[myMenuItem setTitle:NSLocalizedString(@"Special
    Status", @"status menu item text")];
}
```

```
-(BOOL)validateMenuItem:(NSMenuItem*)item
```

```
{
    if ([item action] == @selector(removeStatusItem:)) {
        return (myStatusItem != nil);
    }
    if ([item action] == @selector(addStatusItem:)) {
        return (myStatusItem == nil);
    }
    return YES;
}
```

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The code to remove the status item is very simple. Just one call to `NSStatusBar -removeStatusItem:` and it is gone. Since there is no way to add the existing item back to the bar it is prudent to set the ivar to nil at this time.

To add the `NSStatusItem` back to the bar, the example I simply copied the code from the `applicationDidFinishLaunching:` method. Ideally this should be abstracted so that the code is not duplicated.

Lastly, I added there is a `-validateMenuItem:` method to make sure that only one status item is ever added and just as importantly, that the application is not trying to remove a non-existent item I do not try to remove a non-existent item.

Now, with the addition of a checkbox in the preferences linked to `NSUserDefaults`, it is trivial to add a user preference on whether or not to show the status item. OneI could then add logic to the `applicationDidFinishLaunching:` method to decide whether or not a `NSStatusItem` needs to be initialized based on the `NSUserDefaults`.

Conclusion

That is all there is to the `NSStatusItem` API. Hopefully, one day, Apple will allow third party developers to utilize their internal status items so that we can legitimately produce menu bar items that are feature comparable to the system items. Until then, `NSStatusItem` is a solid API that we can utilize.

As a parting comment, if I wanted my entire application to run as a menu bar item (without a Dock icon ala Twitterific), that only requires one small addition to the `Info.plist`:

Info.plist

```
<key>LSUIElement</key>  
<string>1</string>
```

And the application will not bounce in the dock at all. I do not recommend that for this example application as it is not designed to run in that manner but there are plenty of applications that this is perfectly suited for.

NOTE: This change cannot be made to an application on the fly. So if you wanted to make the Dock icon optional also it would require an application restart and probably some trickery with the Finder as the Finder does tend to "cache" the `Info.plist` file for applications.

M

About The Author

Marcus S. Zarra is the owner of Zarra Studios, based out of Colorado Springs, Colorado. He has been developing Cocoa software since 2003, Java software since 1996, and has been in the industry since 1985. Currently Marcus is producing software for OS X. In addition to writing software, he assists other developers by blogging about development and supplying code samples.

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Wiki Wiki!

“Quick! Quick!” That is the rough translation of “wiki wiki” from the Hawaiian language, and we can thank Ward Cunningham for its inclusion in our daily lives.

By providing a quick way for groups to collaborate, and individuals to speak out, wiki and blog technologies have grown in popularity very quickly, no pun intended. People have found their voice and companies have found an effective way to provide communications amongst their employees. Apple has fed this need by providing wiki and blog services in Mac OS X 10.5 Server. We will take a look at these services, discuss some features and considerations for deployment.

Wiki Planning and Setup

There are several prerequisites when setting up wiki and blog services on Leopard Server:

The first gotcha is that the machine hosting the service needs to have a local OD Master running on it. Note, though, that the machine can also be connected to another directory service, too.

You need to have a website set up to present your wiki info. Protect this site the same way you would any other site, such as VPN-only access, or by using SSL.

Plan your storage. As you may find your users storing a lot of data as attachments to their blogs and wikis, make sure you have an appropriate amount of storage set aside.

Each website can be enabled for wiki and blog services. In Server Admin, go to Web and then pick the site you wish to enable. From there you can choose which wiki and blog services you want to enable and if you want to restrict to certain individuals and groups. In Workgroup Manager, pick which Groups are to have wiki and blog services and enable them in the Basic tab.

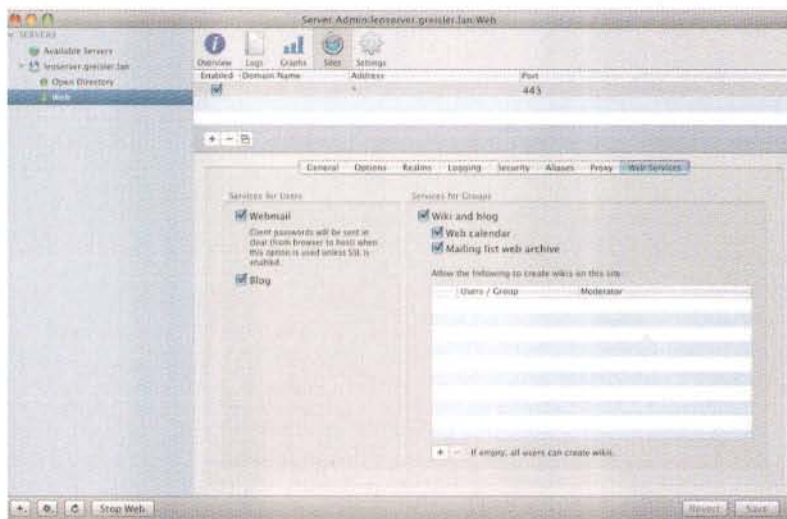


Fig. 1: Setting up wiki and blog services in Server Admin

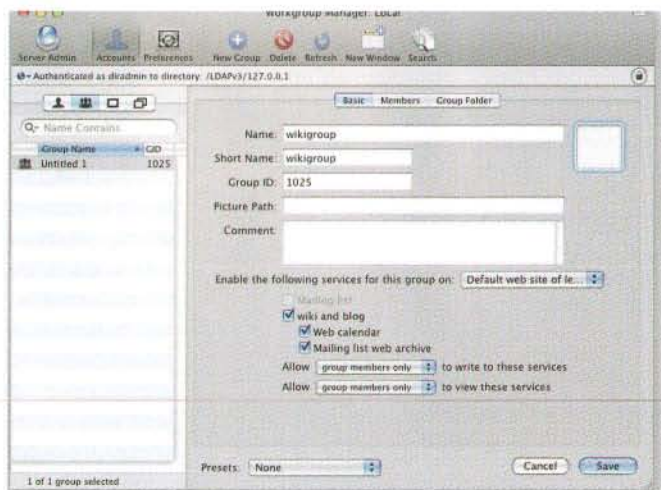


Fig. 2: Enabling wiki services for a group in Workgroup Manager

File Locations

Wiki content is stored in /Library/Collaboration (default) with the following specific locations:

Group's services:

/Library/Collaboration/Groups/groupname/

Wiki page components:

/Library/Collaboration/Groups/groupname/wiki/pagename.page/

Main text, html content:

/Library/Collaboration/Groups/groupname/wiki/pagename.page/page.html

Metadata:

/Library/Collaboration/Groups/groupname/wiki/pagename.page/page.plist

Version history database:

/Library/Collaboration/Groups/groupname/wiki/pagename.page/revisions.db

Graphics:

/Library/Collaboration/Groups/groupname/pagename.page/images/

Attachments:

/Library/Collaboration/Groups/groupname/pagename.page/attachments/

Wiki folder structure:

```
# ls -l
total 8
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:56 ArchivedGroups
drwxr-x-- 3 _teamsserver _teamsserver 102 Apr 5 16:59 Groups
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:56 Users
-rw-r-- 1 _teamsserver _teamsserver 249 Apr 5 16:56 dataVersion.plist

# cd Groups/
# ls -l
total 0
drwxr-x-- 10 _teamsserver _teamsserver 340 Apr 5 16:59 wikigroup

# cd wikigroup/
# ls -l
total 24
drwxr-x-- 3 _teamsserver _teamsserver 102 Apr 5 16:59 discussion
-rw-r-- 1 _teamsserver _teamsserver 5120 Apr 5 16:59 index.db
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 mailinglist
-rw-r-- 1 _teamsserver _teamsserver 432 Apr 5 16:59 metadata.plist
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 public
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 resources
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 weblog
drwxr-x-- 3 _teamsserver _teamsserver 102 Apr 5 16:59 wiki

# cd wiki/
# ls -l
total 0
drwxr-x-- 7 _teamsserver _teamsserver 238 Apr 5 16:59 welcome.page

# cd welcome.page/
# ls -l
total 32
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 attachments
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 16:59 images
-rw-r-- 1 _teamsserver _teamsserver 427 Apr 5 16:59 page.html
-rw-r-- 1 _teamsserver _teamsserver 730 Apr 5 16:59 page.plist
-rw-r-- 1 _teamsserver _teamsserver 5120 Apr 5 16:59 revisions.db
```

Blog content is stored in /Library/Collaboration (default) with the following specific locations:

User's blog:

/Library/Collaboration/Users/(username)/

Blog folder structure:

```
# cd /Library/Collaboration/Users/
# ls -l
total 0
drwxr-x-- 8 _teamsserver _teamsserver 272 Apr 5 17:09 wikiuser1

# cd wikiuser1/
# ls -l
total 24
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 17:09 discussion
-rw-r-- 1 _teamsserver _teamsserver 5120 Apr 5 17:09 index.db
-rw-r-- 1 _teamsserver _teamsserver 479 Apr 5 17:10 metadata.plist
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 17:09 public
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 17:09 resources
drwxr-x-- 2 _teamsserver _teamsserver 68 Apr 5 17:09 weblog
```


Other files:

Note: These files may be overwritten during software updates and any modifications made in these directories might be nullified at that time.

Client side code:

`/usr/share/collaboration/`

Python code, help files, templates, etc:

`/usr/share/wikid/`

Wiki and Blog Security and Control

Being a web based technology, standard web security techniques can be used such as SSL. From the user control perspective you can control wiki access in the Web services list by placing the users and groups you want to allow. You can also use Service Access Control Lists (SACL's) from within Server Admin to determine which users and groups may or may not get access to blogs.

When enabling the group's access to web services in Workgroup Manger, you need to pick which website hosts the desired wiki, and then set the permissions for the group. There are pull-down menus for allowing who can edit the services and who can view then. The choices are:

Group members only. This will allow all users in the group access.

Some group members. Only group members with editing privileges can edit.

Authenticated users. Only users than can authenticate against the directory service.

Anyone. No authentication needed.

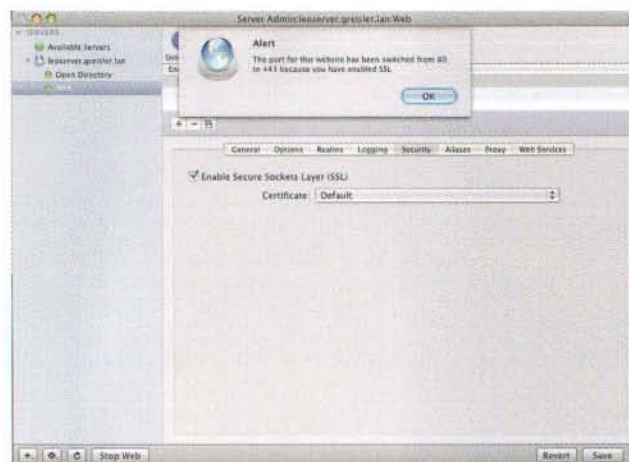


Fig. 3: Turn on SSL in Web services in Server Admin

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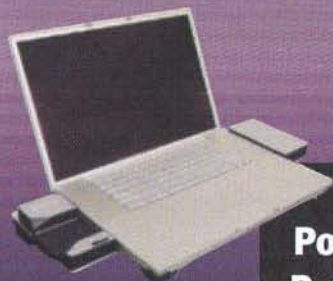
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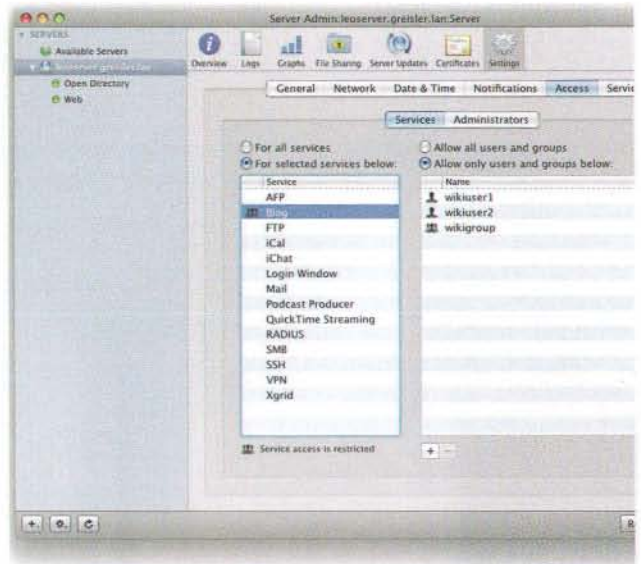


Fig. 4: Setting up a Service Access Control List for blogs in Server Admin

Wiki Templates

Apple provides a set of themes and templates to provide a starting point for wikis and blogs. If you choose to modify a theme, make a copy of it and change the copy, not the original. Apple warns that the originals can be replaced or modified during a

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software update. It is also suggested to start with the wireframe template located at:

/Library/Application/Support/Apple/WikiServer/Themes/wireframe.wikitheme/



Fig. 5: Setting up the default template, attachment size and data store in Web services in Server Admin

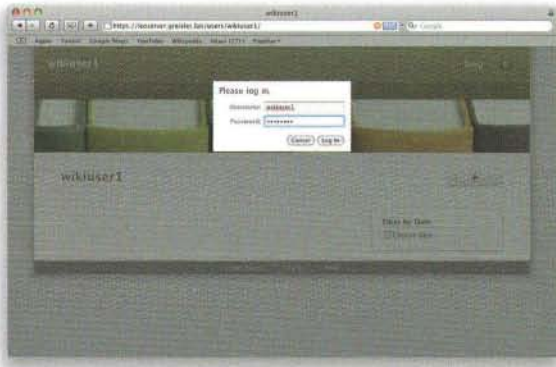


Fig. 6: Default blog interface



Fig. 7: Default wiki interface

Storage Considerations

Blog and wiki entries can contain more than just text. You will find users placing pictures, video and audio into their posts. When you estimate your storage needs, also consider using some form of shared storage, such as Xsan2, if you will want some type of failover or redundant environment for hosting wiki and blog services.

Active Directory Integration Considerations

It is possible to use AD users with wiki and blogs, but due to the fact that the wiki server uses CRAM-MD5 authentication, and the AD plug-in for Open Directory doesn't, you need to allow clear text passwords for wikid. This would be the case if you have your wiki server bound to AD and running as an OD master. Keep in mind that to protect your users, you should be running SSL on the site hosting the wiki.

To enable clear text passwords for wikid, use "serveradmin" to run the following commands:

```
sudo serveradmin settings teams:enableClearTextAuth = yes
?sudo serveradmin stop teams
?sudo serveradmin start teams
```

Additional Gotcha's

While Apache2 is the default webserver in Leopard Server, it is possible to use Apache 1.3. If you choose to do this be aware that you shouldn't use SSL, as it will produce pages with http:// rather than https://. With SSL disabled you lose a front-line security defense.

To disable blog service while maintaining wikis, go to Workgroup Manager (with Inspector enabled) and pick Groups from the pulldown menu. Find the ServicesLocator attribute and click the disclosure triangle. Delete the entry that ends with ":blog" and save the changes.

Conclusion

From my experience out in the field, wiki and blog services, collaboration services in general, have really pushed the adoption of Leopard Server. In the past I have found people hesitant to update their server OS early in the new OS cycle, but the collaboration services in Leopard have made people take the chance and become early adopters.

There is more to be learned about wiki and blog services and it is maturing quickly. I have seen direct Apple responses in various lists and discussions and that indicates to me that Apple is taking wiki and blog services very seriously. We will see more development from Apple and third parties. I expect to see new templates become available from the aftermarket much like what we saw with Keynote.

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I also expect we will learn more about wiki and blog services, such as the tidbit I heard that you may not need to run it on a local OD Master, but simply doing a trusted bind between your wiki and blog server to an OD Master may be enough. I haven't tested it at the time of the writing of the article, but I expect it will work.

Please provide your feedback to me so I may include it in future articles. You can send the feedback to: ben@kadamac.com

MM

About The Author

Ben Greisler is a Certified Apple Consultant and Trainer based in the Philadelphia metro area. He consults and teaches nationally and is a regular speaker at MacWorld. He has worked on major Apple deployments both nationally and internationally for schools, government, and enterprise-level organizations. You can reach him at ben@kadamac.com.

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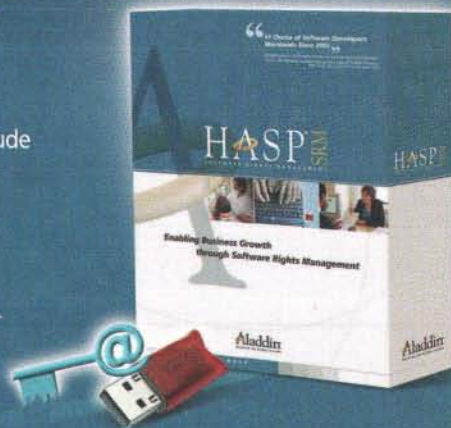
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DVDxDV, DVDxDV Pro

*Converting DVD Media into
files you can actually use!*

By Dennis Sellers

If someone asks you, "What's the best way to get media off a home-made DVD?", what's your answer? "Handbrake" (<http://handbrake.fr/>)? The free, open source multithreaded DVD to MPEG-4 ripper/converter is good, but a little intimidating for some.

A better answer might be, "Try DVDxDV." It's an application that transforms DVDs into digital media that can be read by a Mac. Using DVDxDV, clips from various home movie DVDs can be brought together to make a new movie.

Insert a DVD into your Mac, and you can use DVDxDV to preview it. You can extract the entire DVD or choose a part of the video to capture. Once captured, you can import the footage into any application that can read the QuickTime movie format.

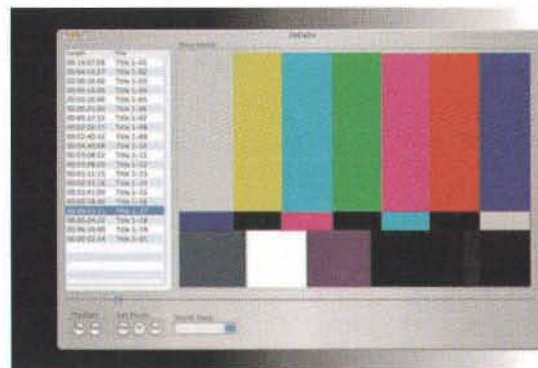
Note that DVDxDV can't read DVDs that contain Content Scrambling System encryption, which includes most commercial DVDs. Sorry, but you can't insert Will Smith as a co-star in your home movie.

DVDxDV comes in two different versions: a US\$25 consumer version and an \$80 professional version. The consumer version is for the home video enthusiast and allows DVD video to be extracted from a DVD and imported into iMovie, Final Cut Express and iDVD.

The pro version is designed for video professionals and allows Final Cut Pro and DVD Studio Pro users to extract high quality multi-channel audio from DVDs. Each individual channel in a sound track can be exported to a separate 24-bit AIFF sound file. What's more, DVDxDV Pro lets you reverse the original interlaced field ordering of a DVD. (DVDxDV uses the same video extraction engine as DVDxDV Pro, but exports all audio to a stereo two channel mix.)

DVDxDV can read a DVD in three ways. It will read an unencrypted DVD directly from your computer's DVD-ROM drive. It can read a DVD that has been copied to your Mac's hard drive. Or it can open an individual ".VOB" file.

Using DVD's preview functions, you can scrub through the video timeline and specify a scene to extract by marking "in" and "out" points. Select the "New Movie" item from the "Extract" menu to extract the video clip. At this point, you're offered a list of presets, from which you can choose (depending on what you



DVDxDV screen shot

plan to do with the extracted video). You'll also be asked to choose where you want the file saved. Then DVDxDV starts extracting the video.

The extraction process can take minutes or hours depending on how much footage you're grabbing and how much power your Mac packs. DVDxDV can preserve the native interlaced format of the DVD. In the pro version, the interlace field order can be changed to lower field or upper field dominant.

DVDxDV can automatically break a movie file up into chunks. For example, the iMovie export setting splits a movie into segments that are small enough to be imported into iMovie.

One use of the application is to save space on your Mac's hard drive. Video footage consumes storage resources rapidly and most people burn their home movies to DVD. However, there are times you may find that you want footage already erased from a hard drive to insert into a new film masterpiece. With DVDxDV, you can find the DVD that has the particular video clip you want, insert the DVD into you Mac and run DVDxDV to grab the footage you want.

You can also use the software to, for instance, grab the entire contents of a DVD, add extra titles, more music, etc. In other words, you can go back and do a "Director's Cut" of that DVD you made weeks, months or years ago.

Both the standard and pro versions have recently been updated for Mac OS X 10.5 ("Leopard") compatibility. DVDxDV Pro can now can resize 16:9 and 2.35:1 anamorphic video so it displays correctly on an iPod or iPhone screen and can direct export from DVD to Apple TV.

Both versions of DVDxDV require Mac OS X 10.3.9 or higher and QuickTime 7.0.3 or later.

URL: <http://www.dvdxdv.com/NewFolderLookSite/Products/DVDxDV.overview.htm>



About The Author

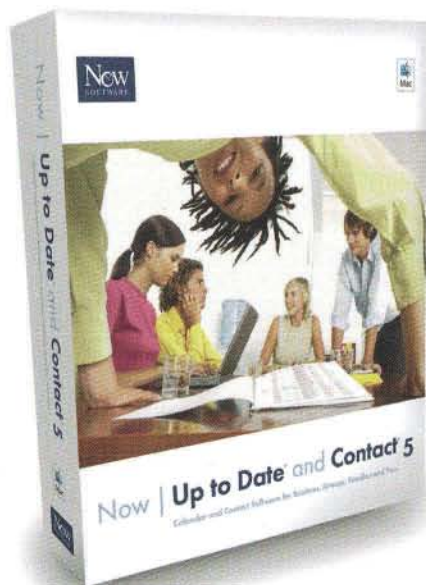
Dennis Sellers is a long time journalist. He started in the newspaper business, but has been in the online journalism business for the past 15 years. He's the editor/publisher of Macsimum News
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OmniGraffle Professional 5

By Dennis Sellers

If you're having problems with a design project, don't grapple with it: Graffle it. OmniGraffle, that is. The Mac OS X diagramming application from the Omni Group was recently updated to version 5.0, adding Mac OS X 10.5 ("Leopard") compatibility, faster layout speed and new automatic layout options thanks to the addition of the Graphviz layout engine.

OmniGraffle lets you drag and drop to create flow charts, org charts, network diagrams, family trees, project processes, office layouts—pretty much anything you can think of that can be represented by symbols and lines. The Leopard compatibility in version 5.0 means that, among other things, OmniGraffle Pro supports Mac OS X 10.5's Quick Look preview feature. With Leopard's Quick Look, you can view the contents of a file without even opening it. In other words, like many other file types, you can look at OmniGraffle Pro 5 files in Leopard even if the Omni Group software isn't open.

In the latest version several of the standard OmniGraffle tools have been beefed up, including the line tools. OmniGraffle 5 includes Bézier lines, so you can create custom shapes with lines made up of curves, straight lines, and control points. The new version also adds a "mini inspector" that makes the most common inspector controls more

accessible. You can change object size, location, fill, stroke and other key attributes right at the top of a document window.

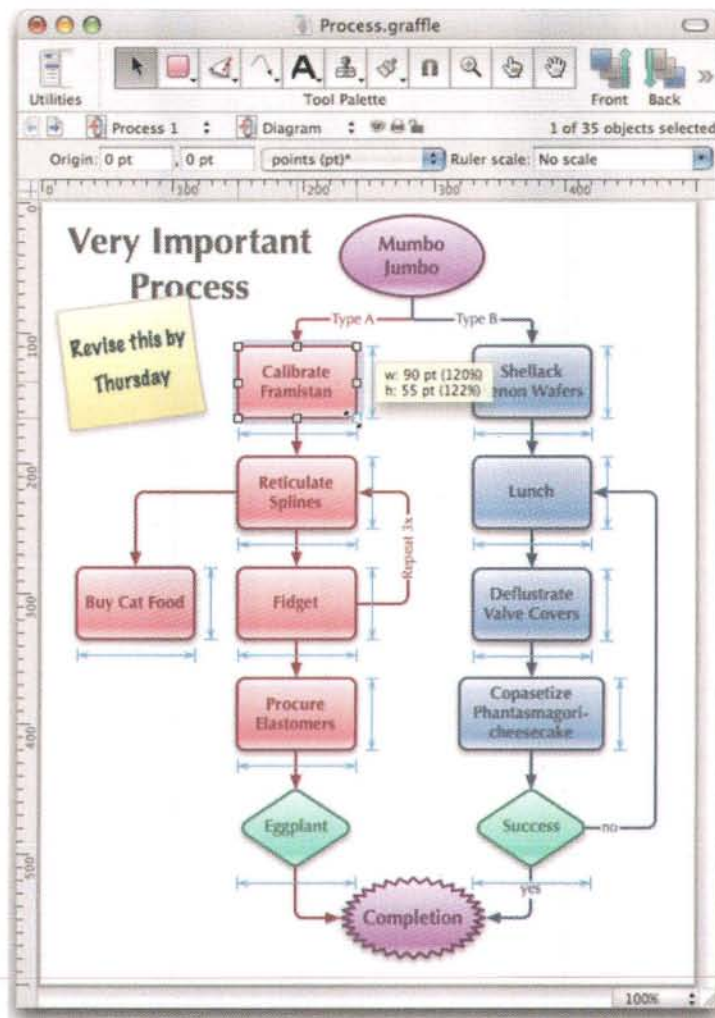
The latest version of OmniGraffle offers support for multiple page ("canvas") documents. You can choose, add, duplicate, and remove canvases using the status bar or the Canvases inspector. Both the status bar and the Canvases inspector depict the various canvases in icon mode; this lets you see which shapes are on which canvases. Canvases can be different sizes, and can be rotated 90 degrees when printed. You can mix landscape and portrait modes.

Outlining has been enhanced in OmniGraffle Pro 5. There's improved integration with the Omni Group's OmniOutliner, which—as you can probably guess from the name—is a tool for creating, collecting and organizing information. You can use OmniGraffle's outline styles as filters if you import OmniOutliner documents, by mapping

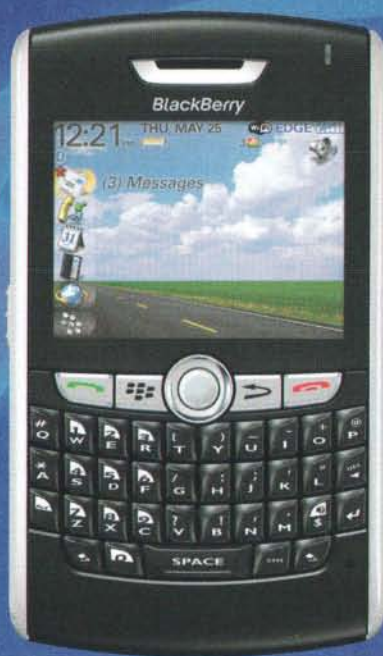
styles to your OmniOutliner document structure. When you enter text information in OmniGraffle's Outline view, the graphical objects that are created can be styled and restyled in a variety of ways. The software can even associate a different style with each level in your outline.

OmniGraffle Pro 5 has improved import and export options. For example, a vector PICT export format is now available. OmniGraffle can both copy as vector PICT and export to that format; this makes it easier to do things such as copy and paste between OmniGraffle diagrams and applications such as Microsoft Word or PowerPoint. Hyperlinks are supported on export to PDF, as is exporting files with multiple canvases as a single, multiple-page PDF file.

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Reliable Handheld Synchronization for Mac

Thanks to **The Missing Sync**, Mac users are no longer second-class citizens when it comes to keeping their mobile devices in sync. Whether it's a **Windows Mobile 6** device, a **BlackBerry** or even a **Palm Treo**, there's a Missing Sync product made to connect and synchronize that device with Mac OS X.

Syncs Contacts, Calendars, Tasks

- Supports Address Book, iCal, Microsoft Entourage 2004
- Outstanding field support, even syncs Address Book contact photos
- Supports calendar event reminders and detached events
- Sync Services-savvy for syncing with third-party apps

Complete Notes Synchronization

- Includes Mark/Space Notebook for Mac to create, edit, categorize, sort and search through notes
- Also supports Microsoft Entourage 2004 and Bare Bones Yojimbo
- Full support for Sync Services and .Mac syncing between Macs

iPhoto and iTunes Integration

- Imports photos and videos from mobile devices into iPhoto albums or folders in the Finder
- Resizes and downloads selected iPhoto albums to the device for handheld viewing and slideshows
- Downloads DRM-free music and podcasts for mobile playback

The Missing Sync for BlackBerry, Palm OS or Windows Mobile is available in single-user licenses for \$39.95 or in multi-user packs for any size organization. The Missing Sync family of products provide a Mac-centric synchronization solution second to none.

Visit www.markspace.com/reliable today to see how easy it is to sync the latest smartphones and mobile devices with the Mac.

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shapes. The Automatic Layout inspector rearranges your diagram according to rules you specify. For example, you can choose "hierarchical" to lay out your document in the familiar "tree" format. Force-directed, radial, and circular layout styles are also available.

With its updated Visio compatibility, OmniGraffle Professional 5 can import Microsoft Visio VSD files directly with continued support for import and export of Visio XML files, as well as import of Visio stencils and templates. In fact, this feature works so well you may consider leaving Visio behind entirely.

OmniGraffle Pro has manual guides to help you in laying out your drawings. Guides can be dragged out onto your canvas from the top, bottom, or side; the shapes snap to the guides that you place.

OmniGraffle has a large community of users that develop and share free stencils. Version 5.0 of the software has new local and online search capabilities in the stencil window that makes it simpler to search, organize and download these stencils. You can retool the shapes from the office layout stencil, as well as stretch and rotate an existing graphic with one of the shape tools. Also, OmniGraffle Pro 5 offers the ability to search Graffletopia, a third-party library of free OmniGraffle stencils.

Overall improvements in version 5 have made the process of drawing and creating in OmniGraffle easier and more intuitive than ever. Anyone who has to diagram anything—from a process chart to a web site mock-up—should download the OmniGraffle 5 demo and see exactly what the software has to offer.

OmniGraffle 5 costs US \$99.95. Upgrades from OmniGraffle 4 are available for \$39.95. OmniGraffle Professional 5 is available for \$199.95 with upgrades from OmniGraffle Professional 4 costing \$74.95.

Available from www.omnigroup.com

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THE MACTECH SPOTLIGHT

Matt Giger

Lunar Software

<http://www.earthbrowser.com>

What do you do?

I am president of Lunar Software, which sells a software product called EarthBrowser. I run the whole show from programming to web design, technical support and server administration.

How long have you been doing what you do?

I have been selling EarthBrowser full time since 1998, but I've been programming Macs since 1986 where we had souped up Macs with 512K of memory.

Your first computer:

A Vic-20 that kept my lap warm on many cold mornings.

What's the coolest thing about the Mac?

Stability and access to the Darwin command line is probably the best thing about Mac OS X right now, but I'd have to say that over the years the thing that has been consistently superior about the Mac is the quality of text rendering. It puts every other operating system to shame.

What advice would you give to people trying to enter this field?

Never be afraid of learning a new thing, no matter how daunting, just take it one step at a time. Always be learning something new.

What's the coolest tech thing you've done using OS X?

I've got a mothballed version of EarthBrowser that uses OpenGL to render shaded relief mountains and the solar system based on a C++/Python game engine with an embedded database.

Ever?

Probably the coolest code I ever wrote was a library that can do colorspace transformation and geographic re-projection of almost any geo-referenced dataset using various resampling kernels.

Where can we see a sample of your work?

<http://www.earthbrowser.com>

The next way I'm going to impact IT/OS X/the Mac universe is:

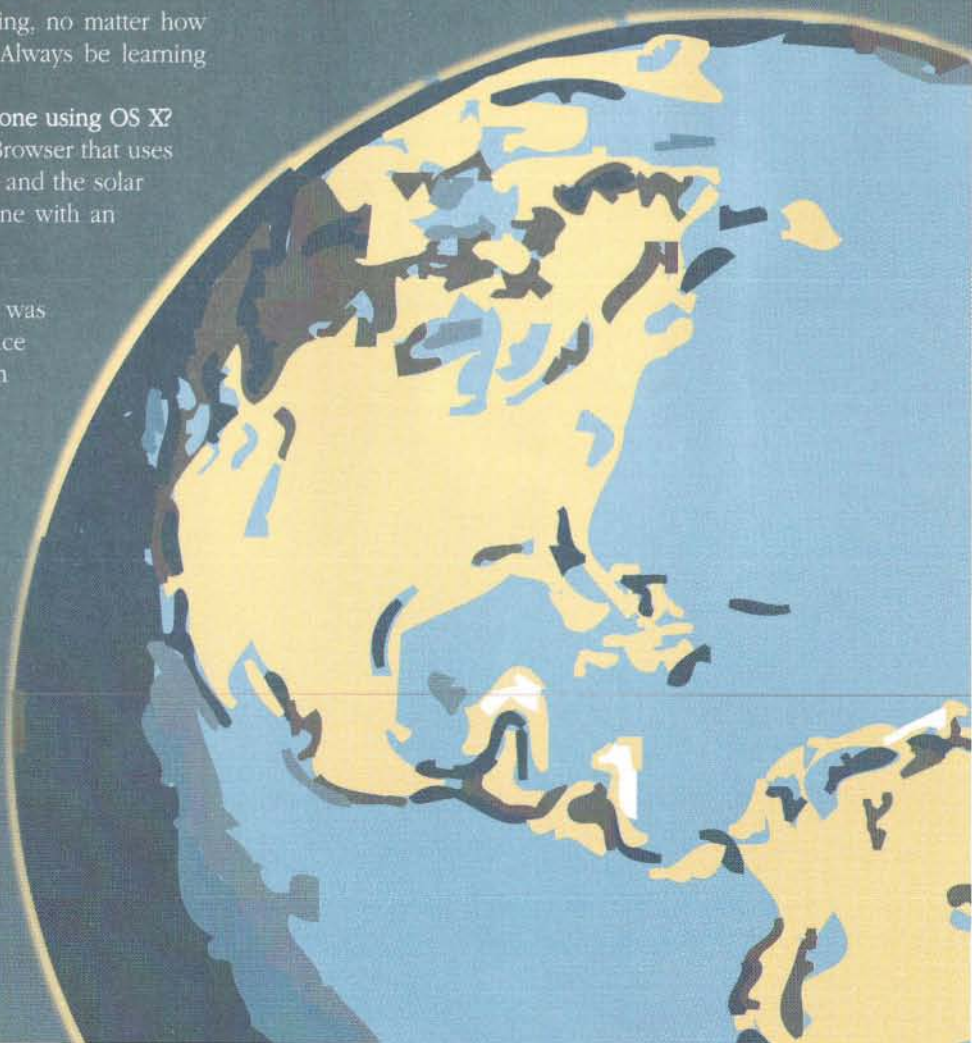
EarthBrowser 3.0 is written using Adobe Flash technology and I will be releasing a Javascript API in the next few weeks. This will allow



anyone to embed a 3D globe directly on their website to display their own geo-content (even KML files).

I blog about my EarthBrowser work at
<http://blog.earthbrowser.com>

If you or someone you know belongs in the MacTech Spotlight, let us know! Send details to editorial@mactech.com



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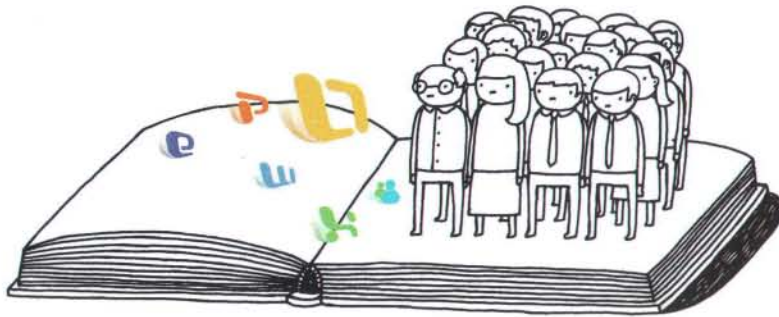
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